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THE
RETROSPECT
OF
PRACTICAL MEDICINE AND SURGERY,
BEING A
HALF-YEARLY JOURNAL,
CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL
IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY
W. BRAITHWAITE,
SURGEON TO THE LEEDS GENERAL EYE AND EAR INFIRMARY; AND LECTURER
ON MIDWIFERY, AND THE DISEASES OF WOMEN AND CHILDREN,
IN THE LEEDS SCHOOL OF MEDICINE.

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PRACTICAL MEDICINE,

&c. &c.

ART. I.—ON NITRATE OF SILVER.

By CHARLES PATTERSON, M.D., Physician to the Rathkeale Infirmary and Fever Hospital.

[The chief object of this paper of Dr. Patterson's is to contradict many of the commonly received opinions of medical men with respect to the mode in which the skin becomes discoloured during the use of this drug, and also to point out a superior way of counteracting this effect. We need not particularize the spasmodic and painful diseases in which this medicine has been found efficacious; epilepsy, chorea, pyrosis, gastralgia, &c., are amongst the diseases which have been particularly alleviated by it. But its discolouring effect on the skin has always been a great objection to its continued administration. Dr. A. T. Thompson, in his *Elements of Materia Medica*, proposes to counteract this effect by the contemporaneous exhibition of nitric acid, on the principle that it would prevent the formation of chloride of silver. "He supposes that the nitrate is taken into the circulation undecomposed, and, arriving in that state at the capillaries of the skin, it is decomposed there and converted into chloride of silver, which is deposited in the *rete mucosum*. The chloride, he says, acquires a grey, leaden colour from its contact with animal matter; and as it is insoluble, it is incapable of being reabsorbed, is fixed in the *rete mucosum*, and a permanent stain is given to the skin; and to produce this effect, a more than usual quantity of muriates must be separated by the cuticular capillaries." Vol. i., p. 714.

Dr. Patterson considers this view as entirely erroneous; and says, "It is not easy to comprehend how the nitrate and

muriates could be carried quietly together by the blood to the cutaneous capillaries; and then, at the moment of their separation through the mysterious agency of those vessels, that they all at once should react on each other."

Dr. Patterson then gives a series of experiments, to prove, that when nitrate of silver is administered, it is decomposed so easily by different substances that not an atom of that salt, when so administered, is taken into the circulation. He shews that the mere secretions of the stomach, the saliva itself, and the simplest article of diet completely decompose it, so that we must arrive at the conclusion, that when we prescribe this preparation, it is not the nitrate, but some other combination, which proves beneficial; and this seems to be the *chloride*, as, in all the cases of decomposition related by Dr. Patterson, chlorine seemed to be the active agent: it was present in the saliva, in the aliment and gastric secretions when the nitrate had originally been given. It cannot be objected that the insolubility of the chloride would prevent its curative effects, as many other substances equally insoluble are known to be sufficiently active, as calomel, ioduret of mercury, sulphur, subnitrate of bismuth, red sulphuret of mercury, and even charcoal, which has been successfully employed in the treatment of ague. If, therefore, the chloride be the active preparation, it would seem to be the preferable practice to prescribe it in the first instance, but in doing this we should encounter the very danger we so much dread.

Dr. Patterson does not even allude to the interesting papers of Mr. Lane, which have been from time to time published, and which will be seen in Article 75, Retrospect, No. ii., and Article 5 of No. iv. This gentleman is of the same opinion as Dr. Patterson, that the nitrate is converted into a chloride, and explains it, by supposing that this is accomplished by the free hydrochloric acid of the gastric juice. Mr. Lane then supposes that the chloride is taken up into the circulation, and when conveyed to the cutaneous surface, is converted into an *oxide* by the action of light and the strong affinity of albumen. This oxide cannot apparently permeate the capillaries, and becomes indelibly fixed, occasioning the dreaded disfigurement. Mr. Lane therefore advises that the chemical process just mentioned should be *anticipated*, and the silver be primarily introduced into the stomach as an *oxide* instead of a *nitrate*, for since the

cutaneous capillaries are not permeable to its egress when once deposited in the skin, as is the bile in jaundice, neither should we expect them to be permeable for its ingress. At the same time we must admit, if Mr. Lane's theory be correct, that the whole value of the oxide depends upon whether it can make its way to the surface or not, for if it can do so, the evil of discolouration would not be diminished by the process recommended by Mr. Lane. We therefore think the observations of Dr. Patterson exceedingly valuable when he speaks of the preparation of the ioduret, as will be presently seen. His observations on the *cause of discolouration* are as follows:]

The immediate cause of the discolouration, as well as that of its permanency, is wrapped in considerable obscurity. Dr. A. T. Thompson, as we have seen, conceives the blue tint to be the colour of the chloride, developed by its contact with animal matter. But chloride of silver, which, prepared and preserved without exposure to light, is perfectly white in open day, when entirely unconnected with animal or vegetable matter, has its surface quickly covered with a beautiful bluish purple hue: therefore, the alteration of colour is wholly independent of the presence of any organic principle. Neither can the permanency of the stain be owing to the insoluble nature of the chloride and its supposed consequent incapability of absorption. For that it is acted on by the absorbents of the stomach, I think is evident from what has been already said; besides the entire skin is not always blackened—therefore it may be presumed that it must be reabsorbed from those portions of the surface of the body which do not suffer discolouration. From these considerations, I am induced to think that chloride of silver is not the colouring ingredient on which the blackness of the skin depends. When the chloride is exposed to the sun's rays, their action extends no deeper than its very surface: and whether that preparation is in mass, or divided into minute particles, the newly-formed coloured substance constitutes the thinnest imaginable superficial film, within which the chloride remains white and unchanged. During the formation of this film, the chloride of silver parts with chlorine. If the white chloride be exposed to the sun, in the exhausted receiver of an air pump, or even in a bottle, free chlorine may be detected. This was long ago noticed by Berthollet. It shows a chemical change of consti-

tution; and as the purple film is the only part sensibly changed, it may therefore be presumed to be that which has been chemically altered. Taking advantage of the free solubility of pure white chloride of silver in water of ammonia, I have been able to obtain this purplish matter separate, but in very small quantity. It is in the form of powder of such extreme exility that it remains for a considerable time suspended in the liquor of ammonia. Its colour is very dark, its previous bright tint having been owing to the reflection of the subjacent white chloride. It is insoluble in ammonia, by which and by its colour it is distinguished from the only known combination of chlorine and silver. Berthollet supposed it to be oxide of silver: but that cannot be the case, for oxide of silver has a reddish brown colour, and is soluble in solution of pure ammonia. It appears to be pure metallic silver in a state of extreme disaggregation; at least such appears to be its state previous to exposure to the action of ammonia.

The discolouration of the skin then is most probably owing to the decomposition of the chloride of silver circulating in the cutaneous tissue through the chemical action of the sun's light, and the deposition there of its metallic basis. All persons are not subject to this accident; for the influence of the sun's rays can only be effective in those cases where the cutis is more than ordinarily vascular, and is clothed with a thin transparent cuticle.

[Dr. Patterson then makes his remarks on what we should deem a valuable preparation, the ioduret of silver, provided that subsequent experience corroborates the statements here made.]

Ioduret of Silver.—It had been for some time occurring to me that the true way of preventing all risk of discolouration of the skin, would be to substitute for the nitrate some preparation of silver, not liable to be acted on by chlorine, or the sun's light. And happening lately to be employed in some photographic experiments, my attention was arrested by the property displayed by solutions of hydriodate of potash in rendering nitrate of silver insensible to the influence of the sun's rays. I saw when a piece of paper was washed with solution of nitrate of silver, and then immediately immersed for a few seconds in a solution of hydriodate of potash, its colour, even when exposed to

the strongest sunshine, to remain unaltered. It was evident, in this process, the hydriodate and the nitrate were both decomposed, and that an ioduret of silver was the result. Ioduret of silver then appeared to be capable of resisting the chemical action of light, and at once suggested itself as a substitute for the nitrate: but it remained to be determined whether in contact with animal matter or medicinally administered in combination with chemical agents, it would retain that power. And to ascertain that point, I executed the following experiments:—

I mixed the ioduret with various animal and vegetable substances—with lard, white of egg, saliva, serum of the blood, with bread reduced to pulp, mucilage of gum arabic, mucilage of starch, simple syrup. I submitted it to the action of different chemical agents, letting it lie for several hours in solutions of muriate of soda,* subcarbonate of potash, subcarbonate of soda, dilute muriatic acid, and in vinegar. I then exposed each parcel experimented on in a large window, having a southern aspect to the full action of the summer's sun for several days; and in no instance was there the least darkening or change of colour perceptible.

Having thus satisfied myself as to the chemical habitudes of the ioduret, my next endeavours were applied to ascertain its therapeutic effects. The first and principal class of diseases, in which I had opportunities of administering it, were those various stomach affections to which the Irish peasantry are so very liable. It is in these affections, I believe the internal use of nitrate of silver has been found to be most generally successful. They therefore afford the best criterion whereby to judge of the comparative efficacy of the ioduret. In such cases it will be seen that it has been almost uniformly beneficial. In epilepsy the result has not been so satisfactory; but having been able to administer it in only two cases, it has not had a fair trial in that disease. In whooping cough it has had variable success. But where that complaint was uncomplicated with fever or bronchitis, I think the ioduret produced an immediate improvement in the spasms, and hastened the final

* It is stated in systematic works on chemistry, that all the iodides are decomposed by chlorine. This is not true of the iodide of silver; at least, neither strong nor dilute muriatic acid, nor solution of muriate of soda, has any effect on it.

abatement of the cough. On the whole, the short time that has elapsed since I began to make use of this preparation, has not afforded me sufficient opportunities to form an absolute opinion as to its merits. However, I have had so much experience of its effects, as just makes me anxious that other practitioners should give it a trial.

[On looking over the cases related by Dr. Patterson, we find them similar to those in which the ordinary preparations of nitrate and oxide of silver have been beneficial, and chiefly in gastric affections, in which the ioduret was given in doses of one-eighth increased to one-fourth of a grain three times a-day. In the gastric affections relief was soon procured, but in epilepsy the remedy was administered irregularly for many weeks, at first in quarter grain, then half grain, and ultimately grain doses three times a-day. The general dose, however, seems to have been about a quarter of a grain. The following remarks of Dr. Patterson are also very interesting.]

Removal of Discolouration of the Skin.—In experimenting on the chemical action, under various circumstances of iodine on silver, I observed the following facts:—

1st. A small quantity of precipitated chloride of silver having been mixed with hog's lard, the mass was spread on a card, and exposed to the sun's light. In a short time, it acquired first a leaden, and then a dark brown colour. I then let fall on its surface a single drop of solution of hydriodate of potash, and again exposed it to the sun's rays. In less than an hour, the spot wetted with the solution became yellow; and for two or three days, under the action of a bright summer's sun, continued to bleach paler and paler, until it became of the lightest canary tint.

2d. The bread crumb reduced to pulp, with solution of nitrate of silver, and remaining on the filtering paper was placed in the sun's light, when it soon became hard, and dry, and blackened, forming a thin lamina spread over the paper. A portion of it was moistened with solution of hydriodate of potash, when, in a little time, its colour altered to a light orange red, which it retained, though exposed for upwards of a month to a strong light. At the end of the month, the whole paper having been so exposed, I applied more solution of the

hydriodate to another portion of the blackened part, and in about ten minutes it assumed a light yellow hue, with a reddish tint.

3d. I took a napkin, on which my own name was written with "indelible marking ink," made of nitrate of silver. The napkin, with the name so written, had been several months in use. Having carefully removed from the written part, by washing, the starch with which the cloth was made up, and wet the name with solution of hydriodate of potash, but the writing remained unaltered. Conceiving that from the influence of soap and starch, and vegetable fibre, on the nitrate of silver in the writing, that metal had entered into some new combination, which rendered it incapable of decomposing the hydriodate, it occurred to me to present the iodine in a nascent state. I therefore wet the part several times, alternately with dilute sulphuric acid, and the solution of hydriodate; and perceiving the letters to be growing pale, I mixed some of the dilute acid, and of the solution in a cup, in which the marked portion of the napkin having been immersed for five minutes, every vestige of the name disappeared.

4th. My fingers were stained with the nitrate of silver. I wetted and rubbed them with some of the solution of hydriodate of potash, and in a few seconds the stains were removed, except in those parts where the skin had been cauterized by contact with the solid caustic. I then moistened part of my arm with solution of subcarbonate of soda; when dried by exposure to the air, I again moistened the same part with a solution of a sample of the nitrate in an ounce of distilled water, and held it uncovered in the sun, until it became black. I then washed it with solution of the hydriodate of potash, when, immediately the stain cleaned off, as if it had only been a simple soil.

From these experiments, the inference is obvious, and there can scarcely be a doubt that in those cases, where the skin has become discoloured from the long use of nitrate of silver, the discolouration may be removed by the internal and external employment of suitable preparations of iodine.

Preparation of Ioduret of Silver.—Ioduret of silver is easily obtained by adding to a solution of the nitrate in distilled water a solution of hydriodate of potash, in atomic proportions. If one hundred and sixty-four grains, or one proportional of ioduret of potassium, be dissolved in two or three ounces of

distilled water, and one hundred and seventy-two grains, or one proportional of nitrate of the oxide of silver, be dissolved in two or three other ounces of distilled water, on mixing the solutions, two hundred and thirty-four grains, or one proportional of ioduret of silver are precipitated. The whole is to be then thrown on a filter, and the ioduret of silver should be washed with repeated affusions of rain, or distilled water, and then dried in the sun, or before a fire. If the ioduret of silver, so formed, be in the slightest degree contaminated with any nitrate of silver remaining undecomposed, the former will be liable to discolouration. It is best then to use the ioduret of potassium in very slight excess; and for facility of practice, equal weights of each salt may be employed. Ioduret of silver, thus prepared, is a soft, rich-looking, granular powder, having the beautiful pale, greenish-yellow colour of the canary bird. Like calomel, it has neither taste nor smell, and is insoluble in water; it resists the action of the diluted nitric, muriatic, and acetic acid, of the alkaline subcarbonates, and of hydrochlorate of soda; and it is very sparingly soluble in solution of hydriodate of potash.

Mode of Exhibition.—From the insoluble nature of the ioduret of silver, and the smallness of its dose, the form of pill seems best adapted for its exhibition. It should be reduced to the state of the finest possible powder, which is not easily effected, on account of its possessing a certain degree of coalescence that causes it to adhere to the pestle. For that reason, and for its more exact subdivision, it is necessary to triturate it with a few grains of some compatible salt. It is also of advantage to add a little liquorice powder to give some bulk to the pills, and a little sugar or syrup to prevent them from becoming too hard. The following is the formula which I have employed :—

R̄ Iodureti Argenti; Nitratis Potassæ ana grana decem, tere simul ut fiat pulvis subtil. dein adde; Pulv. Glycyrrhizæ, 3 ss.; Sacchari Albi, ʒi.; Mucil. Arab. q. s. M. fiant pil xl., quaram æger sumat unam ter in die.

Dublin Medical Press, Aug. 25, 1842, p. 113.

2.—ON THE PRESENCE OF OXALATE OF LIME, AS CHARACTERISTIC OF CERTAIN FORMS OF DISEASE.

By GOLDING BIRD, A.M., M.D., F.L.S., &c. &c.

[It has often surprised those who have paid attention to this subject, that oxalate of lime is but seldom found deposited in the urine, even when calculi of oxalate of lime exist. Even Dr. Prout scarcely refers to the subject of the deposition of oxalate of lime, and seems inclined to adhere to the popular opinion, of the intimate connexion between the presence of saccharine matter and the development of oxalic acid. Dr. Golding Bird, was first led to question the accuracy of the generally received opinion of the extreme rarity of the presence of oxalate of lime in a crystalline form, during his examination of urinary deposits, preparatory to the publication of his paper in the 14th No. of Guy's Hospital Reports. Since that time, he has discovered that oxalate of lime is frequently present in urine in certain forms of disease characterised by a great nervous irritability. This fact will probably be of great use to us in the treatment of certain obscure and tedious affections generally referred to dyspepsia, hypochondriasis, and other analogous ailments. So far from the deposit of oxalate of lime being an unfrequent phenomenon, Dr. Bird says, that "It is of more frequent occurrence in urine than the deposits of earthy phosphates."]

To examine urine for the purpose of detecting the existence of the salt under consideration, allow a portion passed a few hours after a meal to repose in a glass vessel; if this be done in winter, or during the prevalence of frequent and rapid alternations of temperature, a more or less dense deposit of urate of ammonia will generally make its appearance arising either from the sudden cooling of the urine, or from interference with the functions of the skin prior to its excretion. In warm weather, however, or when the functions of the skin are tolerably perfect, the urine, albeit it may be loaded with oxalate of lime, may still appear limpid, or, at furthest, its lower layers only be rendered opaque by the deposition of a cloud of vesical mucus. Decant the upper 6-7ths of the urine, pour a portion of the remainder into a watch-glass, and gently warm it over a lamp, in a few seconds the heat will have rendered the fluid specifically lighter, and induced the deposition of the crystals of oxalate, if any

were present: this may be hastened by gently moving the glass, so as to give the fluid a rotatory motion, which will collect the oxalate to the bottom of the capsule. The application of warmth serves, also, to remove the obscurity arising from the presence of urate of ammonia, which, as is well known, is readily dissolved by exposing urine containing it to a gentle heat. Having allowed the urine to repose for a minute or two, remove the greater portion of the fluid with a pipette, and replace it by distilled water. A white powder, often of a glittering appearance, will now become visible, and this, under a low magnifying power, as by placing the capsule under a microscope furnished with a half-inch object-glass, will be found to consist of splendid crystals of oxalate of lime in beautifully formed octohedra, with sharply defined edges and angles. It sometimes occurs that the oxalate is present in the form of exceedingly minute crystals: it then resembles a series of minute cubes often adhering together like blood-discs: these, however, are readily and rapidly resolved into octohedra under a higher magnifying power.

This process is by far the most satisfactory, and, although it requires a little tact, still, after a few trials, it can readily be performed in a very few minutes: still even this may be avoided by placing a drop of the lowermost stratum of the urine on a plate of glass, placing over it a fragment of thin glass or mica, and then submitting it to the microscope: the crystals diffused through the fluid will then become very beautifully distinct. In this way, however, it is obvious that very much fewer are submitted to examination than by the former process.

It is a very remarkable and interesting circumstance, that this salt, although I have now examined a large number of specimens of urine containing it, has never subsided to form a distinct deposit; remaining for days diffused through the fluid even when present in so large a quantity that each drop of the urine, when placed under the microscope, was found loaded with the crystals. If, however, any substance, capable of constituting a nucleus, be present, the oxalate will be deposited around it, although scarcely in cohering masses, and always colourless and beautifully transparent. If, as occasionally occurs, a specimen of oxalic urine happened to contain an excess of triple phosphate, the crystals of this salt are found mixed with those

of the oxalate. I have also found the octohedra beautifully crystallized on a hair accidentally present in the urine, like sugar-candy on a string. The reason why a large quantity of the oxalate, when present, escapes the eye, arises, I suspect, from its refractive power approaching that of urine; for whenever we meet with a specimen in which the salt has partially subsided, and replaced the decanted urine by distilled water, the crystals often become readily perceptible to the unaided eye, resembling so many glistening points in the fluid.

The crystals of the oxalate, when collected in the manner above directed in a watch-glass, are unaltered by boiling either in acetic acid or solution of potass. In nitric acid they readily dissolve without effervescence. The solution may be watched under the microscope very readily. When the oxalate is allowed to dry on a plate of glass, and then examined, each crystal presents the curious appearance I described in Guy's Hospital Reports, resembling two concentric cubes, with their angles and sides opposed, the inner one looking transparent, and the outer black, so that each resembles a translucent cube set in a black frame. This is best seen under a half-inch object-glass: with a higher power this appearance is lost.

In a very few cases the oxalate is met with in very remarkable crystals, shaped like dumb-bells, or rather like two kidneys with their concavities opposed, and sometimes so closely approximating as to appear circular. These crystals are produced, in all probability, by a zeolitic arrangement of minute acicular crystals. I have as yet met with but three cases in which this variety was present. One of these was under my care for some months; and I had repeated opportunities of examining the urine. The remarkable crystals now referred to became in all mixed with, and ultimately replaced by, the ordinary octohedral variety.

[The greatest possible difference of size of these crystals seems to exist. In a single drop of urine some of the crystals being five or six times larger than others. In most cases the urine is of a fine amber hue, often darker than in health, but never presenting an approach to the greenish hue described by Dr. Prout. "In many instances a deposit of urate of ammonia occasionally tinted pink by purpurine, fell during cooling." "In more than half the cases the oxalate of lime was found un-

mixed with any other saline deposit; in a very few crystals of uric acid were found from the first mixed with the octohedra of oxalate of lime, and in nearly all the successful cases this acid appeared in the course of the treatment, and ultimately replaced the oxalate altogether at a period generally contemporary with the convalescence of the patient." No instance has yet been perceived of a complication of this oxalic affection with granular degeneration of the kidneys, "out of eighty-five cases, the oxalate was present, unmixed in forty-three cases, mixed with urate of ammonia in fifteen cases, with uric acid in fifteen, with triple phosphate in four, phosphate deposited by heat eight." In no instance has Dr. Bird yet found sugar present in oxalic urine, although he commenced his investigations with a strong bias in favour of the common opinion that there was a close connexion between the presence of saccharine matter and oxalic acid.

Now what is the source of the oxalate of lime? Dr. Bird says]

It is scarcely possible to avoid being impressed with the very probable physiological relation between oxalic acid and sugar: we know that the latter substance forms a considerable item in our list of aliments; we know that the great majority of farinaceous matters are partially converted into this element during the act of digestion; and it is indisputable that, under certain circumstances, it finds its way into the blood, and is eliminated by the kidneys; and lastly, we know that, under certain morbid influences, the great proportion of our food may, whilst in the stomach, be converted into sugar, which becoming absorbed, rapidly passes through the circulation, and is thrown out of the system of the kidneys as an effete matter, with the effect of producing more or less rapid emaciation, and in most cases leading to fatal marasmus. Then, recollecting the facility with which sugar and its chemical allies, as starch, gum, and wood fibre, are under the influence of oxydizing agents, converted into oxalic acid, and having sufficient amount of evidence to prove that when oxalic acid is really found in the urine, symptoms bearing no distant relation to those of a diabetic character are met with, we are almost inevitably led to draw the induction that the oxalate of lime found in the secretion owes its origin to sugar, and to locate the *fons et origo malorum* in the digestive organs. This appears to be nearly the view adopted

by that very excellent authority in these matters, Dr. Prout; and thus to a great extent are we led from his reasoning to explain the two classes of cases which he has included under his oxalic diathesis; the one including those in which, from symptoms, he suspects the presence of oxalic acid, and the others including the cases in which all doubt was removed by the presence of calculous concretions.

Excluding the cases to which Dr. Prout has referred, and confining our consideration to those which I am now endeavouring to draw attention to, the following facts may be stated as fully born out by the observations I have made:—

1. That in the urine under consideration oxalate of lime is present, diffused through the fluid, and in a crystalline form.

2. That in rather more than one-third of the cases, uric acid or urates existed in large excess, forming the greater bulk of the existing deposit.

3. That in all there exists a greater proportion of urea than in natural and healthy urine of the same density; and in nearly 30 per cent. of the cases, so large a quantity of urea was present, that the fluid crystallized into a nearly solid mass on the addition of nitric acid.

4. That the urate of ammonia found in the deposits of oxalic urine is occasionally tinted of a pink hue.

5. That an excess of phosphates frequently accompanies the oxalate.

6. That no evidence of free sugar has occurred in the specimens I have examined.

Every one is now tolerably familiar with the compositions of the urine in diabetes, and it has been determined, from great observation, that, as a general rule, diabetic urine very seldom contains an excess of urea, uric acid, or urates, especially the pink variety; and that this secretion is remarkably free from saline deposits; the increased specific gravity depending upon the presence of large proportions of sugar. In the oxalic urine under consideration, the density *increases with the quantity of urea*, which is often present in very large excess; deposits of uric and urates are frequent; and, further, no analogy whatever with saccharine urine exists, save in density; which we have already learned depends upon a totally different cause. Thus, so far as the abstract examination of the urine is concerned, not the slightest countenance is given to the idea of their being any

relation between oxalic and saccharine urine, however much our preconceived and hypothetical views may have led us to expect the existence of such relation. What, then, is the source of the oxalate of lime? and how can its production be explained consistently with the phenomena presented by the urine? From the cases detailed in this paper, we shall have no difficulty in proving to a demonstration, the positive and constant existence of serious functional derangement of the digestive organs, especially of the stomach, duodenum, and liver; and, further, that the quantity of oxalic acid generated is, to a very considerable extent, under the control of diet; some articles of food at once causing the excretion of this substance in very large quantities, whilst others appear to have the effect of nearly totally checking it. These circumstances alone, together with the emaciation so generally present in the disease under consideration, at once prove, that whatever be the immediate agent which causes the kidneys to receive the oxalic acid from the blood, that the primary cause must, as Dr. Prout has well and satisfactorily shown, be referred to the digestive and assimilated functions. It must, then, be recollected that an excess of urea, and often of uric acid, in most instances accompanies the development of the oxalic urine. It is, therefore, highly probable that both these unnatural states of the secretion are produced by the same morbid influence; and, further, when the very remarkable chemical relation existing between urea, uric acid, and oxalic acid, is borne in mind, as well as the readiness with which the former are converted into the latter, is it not a legitimate conclusion to suppose that the disease under consideration ought to be regarded as a form of azoturia (of which an excess of urea is the prevalent indication), in which the vital chemistry of the kidney has converted part of the urea into oxalic acid? This view appears to me to be supported by what I have observed of the history, symptoms, and progress of the cases, as contrasted with the changes presented by the urine during treatment.

Medical Gazette, July 22, 1842, p. 638.

[Professor Liebig, in his *Physiological and Pathological Chemistry*, traces the source of oxalic acid, not to any transmutation in the elements of sugar, but to the oxidation of uric acid; and the only difference between this opinion and that of

Dr. Bird, seems to be, that whilst Liebig considers the oxalic acid the result of the oxidation of uric acid, Dr. Bird attributes it to the re-arrangement of the elements of urea, giving up at the same time an atom of oxygen. The only question is, not whether oxalic acid is generated from sugar, but whether uric acid or urea is its source? This, however, is not of much consequence in a practical point of view. We are not able, from our limited experience in these cases, to give a very satisfactory account of the symptoms which attend them.]

The patients, however, are generally remarkably depressed in spirits, and their melancholy aspect often enables us to suspect the presence of oxalic acid in the urine; I have never witnessed the lurid, greenish hue of the surface to which Dr. Prout has referred. They are generally much emaciated, except in slight cases, extremely nervous, and painfully susceptible to external impressions, often hypochondriacal to an extreme degree, and in the majority of cases, suppose they will fall victims to consumption. They complain bitterly of incapability of exerting themselves, the slightest exertion bringing on fatigue. In temper they are irritable and excitable; and in men the sexual power is generally deficient, and often absent. A severe and constant pain, or sense of weight, across the loins is generally a prominent symptom. The mental faculties are generally but slightly affected, loss of memory being sometimes more or less present. Well marked dyspeptic feelings are always complained of. Indeed, in most of the cases in which I have been consulted by their medical attendants, I have been generally told that the patient was ailing, losing flesh, health, and spirits daily; or remaining persistently ill and weak, without any definite or demonstrable cause. In a few the patients have been suspected to be phthisical. It is, however, remarkable that I have never yet met with a case of this disease in which phthisis was present.

Regarding the *causes* of the secretion of oxalic acid, they were, in the majority of cases at least, generally well marked; and in nearly all, the predisposing cause was nearly the same, viz. a chronic and persistent derangement of the general health, or the result of previous acute disease, dyspepsia, injury to the constitution by syphilis and mercury, by child-bearing and over-lation, by venereal excesses and intemperance. The exciting cause has generally consisted in some circumstance

which has determined the irritation to the urinary organs. Of these, exposure of the lower part of the spine to cold, mechanical violence inflicted over the kidneys, unnatural excitement of the genital organs, as shown by the frequent occurrence of involuntary seminal emissions, or irritation from passing a bougie, have most generally constituted at least the most apparent exciting cause. In many cases, however no other obvious cause existed than great mental anxiety, produced often by extreme attention to business some time previously.

The pathological cause of many of these symptoms, as well as the loss of strength and emaciation present in these cases, is in all probability to be partly explained by the relation existing between the essential azotised element of our food (at least of that derived from the animal kingdom, and in part from the vegetable), viz. the protein of Mulder, and the uric acid or urea, which on one of the two hypotheses to which I have adverted, is generated, to appear in the urine as oxalic acid. Professor Liebig has indeed shown that the production of the characteristic ingredients of animal secretions is less to be regarded in the light of a generation of new matter, than of the re-arrangement of the elements of principles with which we have been long familiar. Thus it appears that two atoms of blood added to two of oxygen and two of water, contain the very same elements as one atom of choleic acid, the essential ingredient of bile, and two of urate of ammonia. Consequently it is fair to presume that the conversion of blood into the most important ingredients of the urine and bile, by producing a drain upon the system, aids, at least, the emaciation of the patient. I have, however, shown, by numerical data, that in addition to the oxalic acid, a great excess of urea was generally present in the urine; and it is a very remarkable circumstance that the elements of blood and muscular flesh, with the addition of oxygen and water, are indetical with those of urea, bile, carbonic acid, and ammonia, being substances which are eliminated from the circulating mass, or produced by the metamorphosis of tissues, and thrown out of the system by the kidneys, liver, lungs, and skin; so that the disease under consideration may be regarded as a case in which the demand for nutriment in the body exceeds the supply. Thus, if we take the empirical formula of dried fresh blood, or muscular flesh, for they are identical, as assumed by Liebig (from the analyses of Playfair and Bok-

mann), we shall be struck by the remarkably close relation borne by the ingredients of the secretions to which I have alluded, to the pabulum whence they are generated.

	C.	N.	H.	O.
2 atoms blood.....	=96	×12	×78	×30
10 atoms water }	=			10×24
14 atoms oxygen }				

$$96 \times 12 \times 88 \times 54$$

	C.	N.	H.	O.
1 atom choleic acid (essential } ingredient of bile) }	=76	× 2	×66	×22
4 atoms urea.....	= 8	× 8	×16	× 8
12 atoms carbonic acid.....	=12			24
2 atoms ammonia.....	=		2	× 6

$$96 \times 12 \times 88 \times 54$$

Treatment.—This, in the majority of cases, has been very successful; a few only resisting all the plans which were adopted. As a general rule, the functions of the body, where obviously imperfect, should be corrected, the general health attended to by the removal of all unnaturally exciting or depressing influences, the skin should be protected from sudden alternations of temperature by a flannel or woollen covering, and the diet carefully regulated. This has generally consisted of well-cooked digestible food, obtained in about equal proportions from the animal and vegetable kingdom; all things which tend to produce flatulence should be carefully avoided. The drink should consist of water, or some bland fluid, beer and wine being excluded, especially the former, unless the patient's depression render such positively necessary. A very small quantity of brandy in a glass of water has generally appeared to be the most congenial beverage at meals. The administration of nitric acid, as suggested by Dr. Prout; or what appeared to be preferable, the nitro-hydrochloric acid, in small doses, in some bitter infusion; or, when necessary, laxative mixture, was, with minute doses of mercury, generally successful, if continued a sufficient length of time. In cases where these failed, active tonics, especially the sulphate of zinc, appeared to be of great service, by subduing the irritable state of the nervous system.

The shower-bath, by acting in a similar manner, has also been of great service. There is one remedy which appears to exercise a marked influence over the characters of the urine, and which, from the small amount of experience I have had with it, seems to hold out the probability of its great utility in the disease under consideration: I allude to the colchicum, which, it is now generally admitted, exerts an immense influence over the organic system of nerves, and the functions under its control. The character of the urine is remarkably influenced by this drug, an excess of uric acid generally being present during its administration; and in two cases, in which oxalate of lime existed in abundance before its employment, uric acid appeared in a few days as a deposit, and nearly entirely replaced the oxalate; a circumstance generally observed during the successful treatment of this disease by other remedies. In no case have I seen the disease suddenly yield; it has generally slowly disappeared *pari passu* with the decrease in number and size of the crystals of the oxalate.

[The following case, is brought forward by Dr. Bird, amongst others, as an illustration of the practical value of a knowledge of this subject.]

On February 15th of the present year, I was consulted by Mr. W. Stone, in the case of Mr. B——, a gentleman residing in a densely populated district on this metropolis. He was a remarkably fine man, about thirty years of age, of dark complexion, and whole expression strongly characteristic of deep melancholy; he was highly educated, and appeared to have painfully susceptible feelings. It appeared from his history that, until within the last four years, his health had been excellent; at that time he contracted a sore, which was regarded as syphilitic, and so treated, with, *inter alia*, abundance of mercury and iodine, which appeared to have aided in bringing on an extremely cachectic condition. Partly recovering from this, he left England on an eastern tour. He visited Malaga, Egypt, and returned to England *via* Constantinople. At each of these places he underwent treatment for what he regarded as a return of venereal symptoms, apparently only manifested by relaxation of the throat producing hacking cough. At the latter place he fell under the care of Dr. Mac Guffog, who evidently took a very correct view of his case, and he received decided benefit from his treatment. At last, wearied and dispirited, with an

irritable throat, bearing about with him what he regarded as a venereal taint, and tired with wandering, he returned to England, a prey to the most abject hypochondriasis. When I saw him his naturally expressive countenance indicated despair: he complained bitterly of the inefficacy of medicine, and seemed only to doubt whether he were doomed to die of syphilis or phthisis. The pulse was quick and irritable; tongue morbidly red at the tip and edges, and covered in the centre with a creamy fur. He had lately lost much flesh; he was troubled with a constant hacking cough, which evidently depended on an enlarged uvula; for on examining the chest I could not succeed in detecting any evidence of disease. There was extreme palpitation, increased by eating and by exercise, much flatulent distension of the colon, with pain between the shoulders, across the loins, and over the region of the stomach; extreme restlessness, and nervous excitement, accompanied every action. The bowels were inclined to be constipated; urine copious; appetite rather voracious, but unsatisfying; skin acted imperfectly.

Feb. 15th.—The urine past last night was acid, pale, of specific gravity 1·0295, contained much mucus, with abundance of flesh-coloured urate of ammonia in suspension. On warming a portion, so as to dissolve the latter, a very copious crystalline deposit of oxalate of lime, in *cuboid* crystals, was rendered beautifully visible by the microscope. A large excess of urea was present, the addition of an equal bulk of nitric acid rendering some of the urine placed on a watch-glass nearly solid in ten minutes. The urine passed this morning was precisely similar.

R_x Acid. Nitrici Acid. Hydrochlor. aa. ʒj.; Inf. Serpentariæ, ʒxj.; Syr. Zinzib. ʒj.; M. capt. ʒj. ter die.

R_x Ext. Aloes Pur. ij.; Conf. Opii, gr. iij. M. ft. pil. o. n. s.

Allowed a bland nutritious diet, with three glasses of old sherry daily: no vegetables, butter, or sugar.

He continued this treatment patiently and persistently until March 20, when he was so much better that he desired to take a country trip. I discontinued his medicines, and ordered him a mild tonic aperient draught occasionally.

Medical Gazette, Aug. 12, 1842, p. 749.

[Several other extremely interesting cases are related, which we have not space to detail, but we would strongly advise the reader to refer to the original papers and cases, if he have an opportunity. In another case, the patient complained of intense pain across the loins: he had led a very active life, but not an intemperate one, eating, however, at times voraciously; any indiscretion in diet would aggravate this pain considerably, and on such an occasion he was completely crippled, although, by making a powerful effort, he could sometimes manage to walk. He became subject to the most distressing hypochondriasis, looking at all occurrences in the most unfavourable light.]

May 1st. The urine passed last night was pale amber-coloured; it contained much mucus, was acid, did not coagulate by heat; it contained in diffusion a large quantity of urate of ammonia, which, on the application of heat, dissolved, and left a copious deposit of lozenges of uric acid, mixed with cohering crystals of that substance in the form of crystalline gravel: its specific gravity was 1.026: it did not coagulate by heat, but contained an excess of urea: on the addition of nitric acid, it in a few seconds became filled with fine crystals of nitrate of urea.

The urine passed this morning was of specific gravity 1.024, and in other respects resembled the night urine.

R̄ Hyd. c. Cretà, gr. iss.; Ipecac. Pulv. gr. j. ft. pilula
o. n. s.

Omit all beer and spirits, as well as fatty and indigestible articles of food. Plain diet with animal food once daily.

8th. Much the same; the bowels had acted with copious bilious discharges; pain still intense; depression very great. The urine passed last night was of specific gravity 1.030; it was acid, pale, contained abundance of urate of ammonia, which by heat, disappeared, leaving distinctly visible under the microscope, a copious deposit of oxalate of lime in minute *cubes*, mixed with an abundance of nucleated epithelium: no uric acid. On the addition of nitric acid, the urine almost immediately solidified from the copious crystallization of nitrate of urea.

The morning urine was of specific gravity 1.027. It contained a great excess of urea, and resembled the night urine in every particular, except that the urate of ammonia was

tinted with pink, and the crystals of oxalate of lime were much larger, being fine octahedra.

R. Acidi Nitrici, ℥ij.; Acidi Hydrochloric. ℥vj. ter in die ex cyatho Inf. lupuli, sumend.;

9th. The urine was sent to me; that passed last night was healthy in colour; quite limpid; sp. gr. 1·027. Under the microscope it appeared full of fine octahedra of oxalate of lime. That passed this morning resembled it in every thing, save in its lower specific gravity, being 1·021. Both contained excess of urea.

16th. Very much improved. He has been quite free from pain for several days; is in excellent spirits. He has taken more exercise, having been out rook-shooting the whole week, and been "living well."

Last night's urine was of sp. gr. 1·022. No visible deposit. Under the microscope a few small octahedra of oxalate of lime, mixed with cylinders of uric acid, were visible. The specimen passed this morning was of sp. gr. 1·017, and contained still few crystals of the oxalate.

23rd. Appears completely well in health and spirits; is now cheerful, and free from pain. The urine passed this morning contained no oxalate; had a slight deposit of uric acid in lozenges, but was still rather too high in specific gravity, being 1·024.

Medical Gazette, Aug. 19, 1842, p. 794.

3.—TREATMENT OF GRAVEL.

By DR. WATSON, Lecturer on the Practice of Medicine, King's College, London.

[The following outline of the treatment of the several kinds of gravel, will perhaps refresh the memories of some of our readers. We need not say how important it is in all these cases to pay particular attention to the urine, as it is upon the accurate knowledge of the different kinds of this excretion that the successful treatment of calculus in the kidney, stone in the bladder, and the different kinds of gravel, must depend. Dr. Watson says with reference to this subject:]

You know, probably, that the urine voided by a person in health always exhibits *acid properties*, always turns litmus paper red. Not that healthy urine contains a free acid; but only (according to Dr. Prout, who is the great authority in

these things), that certain of the alkaline and earthy bases are not exactly neutralized, but exist in the state of supersalts. The pure lithic acid is nearly insoluble; but the lithate of ammonia is very readily soluble: and it is this which reddens the vegetable blues. Now, whether out of the body or within it, the lithate of ammonia will, of course, be decomposed, if any acid be present in the urine, for which ammonia has a stronger affinity than it has for the lithic acid: and the latter will be thrown down, in the form of a red sand: little crystals, in point of fact, they are very much like in shape, size, and colour, to particles of Cayenne pepper. I shew you some collected by one of my out-patients at the hospital. He must have passed a peck of it while under my observation: and I am sorry (having lately lost sight of him) that I did not procure a large quantity for the museum.

Now this lithic acid, or red sand, or gravel, is liable to form in the kidney, if not in the bladder, and to concrete into calculi; and the calculi once formed, or indeed, any solid substance, will constitute a nucleus upon and around which a farther and repeated incrustation of a similar nature is almost sure to take place. You will at once perceive the importance of doing nothing to aggravate this disposition to deposit lithic acid; but of trying to prevent or stop it. If there be symptoms of stone in the kidney, or in the bladder, and we have reason to believe that it consists of lithic acid, there are medicines which would tend to render matters worse, and there are others of which the effect would be to correct the lithic acid *diathesis* as it is called. But how are we to know whether the presumed calculus be of that kind or not?—or rather, how are we to know that the lithic acid diathesis exists? Why, we learn that it exists by noticing the habitual qualities of the urine, and the habitual state of the patient's general health.

In the urine of persons who have the lithic diathesis, you will find that there are frequent deposits, after it has become cool, of reddish sediments, looking like brickdust, and therefore, called *lateritious*. These sediments consist chiefly of the lithate of ammonia, tinged with certain colouring matters in the urine. Sometimes pure lithic acid appears, in the shape of fine sand, or in larger crystals. The urine itself is bright, of a dark coppery colour, like brown sherry. It is more acid than the

urine of health, and gives to litmus paper a deeper shade of red. It is apt, too, to fall below the average quantity.

The presence of this diathesis is likewise accompanied, and so far denoted, by a tendency to feverish and inflammatory complaints. The patients are troubled with acidity of stomach, and heartburn; many of them are subject to gout or rheumatism. They are mostly also indolent and luxurious, or intemperate in their mode of life. Adults are peculiarly obnoxious to this condition of the system after the age of forty. But children, up to the period of puberty, are very liable to have lithic acid gravel.

Whenever a paroxysm of nephritic pain befalls a person whose time of life, the characters of whose health, and the qualities of whose urine, are such as I have been describing, you may conclude that the concretion which has occasioned the symptoms is of the lithic acid kind: and you may expect that such attacks will recur; for it is observed of these lithic acid renal calculi, that they are generally numerous in the same individual.

Now the formation of lithic acid may be controlled by the exhibition of alkaline remedies. You will find that free livers use alkalis to neutralize the excess of acid which results from their intemperate habits; the bicarbonates of soda or potass. They do this without any reference to the appearance of their urine, to prevent or appease the uneasy feelings produced by a debauch. But it is of importance to be aware that one of these salts is preferable for the purpose of obviating the lithic acid diathesis than the other, Soda will sometimes combine with the lithic acid, and form an insoluble salt, as hard, and as pernicious, when deposited around a nucleus, as the lithic acid itself. With potass there is no such danger. If it should combine with the lithic acid, the resulting salt is perfectly soluble, and will pass away dissolved, in the urine. Magnesia is also a good medicine in such cases; but it has this disadvantage, as I showed you indeed before, that when taken habitually, it is apt to cause *intestinal* concretions: and these may be as dangerous as the urinary ones. One of the best modes of giving the bicarbonate of potass is in the common saline draught. The stomach has the power, apparently, of destroying the *vegetable* acids, and the remedial properties of the bicarbonate become thus equally certain with those of the pure

alkali; and it is much less likely to derange or disagree with the stomach. Of course the mode of living ought to be changed when the lithic diathesis prevails; the patients should dine moderately and plainly, eating of one dish, and avoiding indigestible substances, and fermented liquors. But, as I mentioned in a former lecture, they will not, if they can help it, give up their accustomed indulgences: and they attempt, and we attempt, but the attempt is often made in vain, to *remedy* disorders, which might with ease and certainty have been *prevented*.

You must take care not to give these alkaline remedies too long; nor in too great quantity. You must not push them to such an extent as entirely to destroy the acidity of the urine: for if you do, your patient is exposed to the same danger as before, but from an opposite cause. A *white sand* or gravel will be apt to form in the alkaline or neutral urine: and this will collect itself, by the force of aggregation, around any existing calculus, or foreign substance. The white deposits consist mainly of the triple phosphate of ammonia and magnesia; and if you examine collections of urinary calculi, you will find that they are sometimes made up of concentric layers; and one layer may be composed of lithic acid, and the next of the triple phosphates; and so on, as the condition of the urine has alternated. You must test the urine therefore, and see that it still reddens litmus, though perhaps faintly. The saline draught has always a tendency to make the urine alkaline; and thus it is, probably, that it proves of use in febrile disorders: but it is an absolute poison to those whose urine is already alkaline. Colchicum has a similar tendency to diminish the acid reaction of the urine. So has mercury. And I may tell you—speaking generally of morbid states of the urine—that it is much more easy to correct too great acidity than to rectify the opposite condition. We can almost always make acid urine neutral or alkaline: but to render alkaline urine acid, is often beyond our power.

You will have observed from what I have already said, that there is a morbid condition of the system, the opposite of that in which the lithic diathesis prevails. The phosphatic diathesis, namely; in which there is a readiness to deposit *white gravel*; composed of minute shining crystals of a triple salt, the phosphate of ammonia and magnesia. The way in which this is

formed, according to Dr. Prout, is as follows. Healthy urine contains the phosphate of magnesia, which is very soluble; and, therefore, is dissolved in that fluid. But, under certain circumstances, the urea of the urine becomes decomposed in the kidneys, and ammonia is extricated, which combines with the phosphate of magnesia, and forms an *insoluble* triple salt. Sometimes with the triple phosphate just mentioned, there is also an admixture of phosphate of lime.

It is a fact of vast practical importance, that the tendency to the formation of the phosphates goes along with a debilitated condition of the system. Persons who have been rendered weak and feeble by over much toil, by mental anxiety, by insufficient nourishment, are very apt to pass water that is alkaliescent or but faintly acid, and to exhibit the tokens, in their urine, of the phosphatic diathesis. They are for the most part, cachectic, sallow, languid, spiritless. The urine itself is pale, copious, slightly turbid or opaline, of a low specific gravity, and it does not smell like healthy urine: sometimes it has somewhat the faint odour of weak broth. It is occasionally alkaliescent when voided; never more than slightly acid. As the urine cools, the white sand is thrown down; and in many cases a sort of film is formed upon the surface of the water, exhibiting, as you see it in different lights, all the colours of the rainbow: an iridescent pellicle. This has been found to consist of the triple phosphate. If you skim the pellicle off, by placing a bit of paper under it, and then suffer the paper to dry, you may distinctly see the little crystals. Urine of this kind speedily grows putrid and highly offensive. Sometimes it has a strong ammoniacal smell. You may estimate the intensity of the phosphatic disposition by the rapidity with which the urine becomes alkaliescent. Occasionally the salt is so abundant that it is thrown down while the urine is still in the bladder; and the last portions of the issuing stream look milky.

Any thing which tends farther to depress the powers of the system will aggravate the phosphatic diathesis. When you find that your patient passes urine such as I have been last describing, which does not redden litmus paper, but on the contrary turns litmus paper that has been reddened by a weak acid, blue again, or even in some cases is alkaline enough to make turmeric paper brown—in such cases you must cautiously abstain from all remedies that are calculated to lower the vital

powers, from saline draughts, and alkalies of all kinds; from mercury and colchicum; from bleeding; and even from active purgation: or you will add to the patient's dangerous weakness, and promote the more abundant deposit of the alkaline phosphates. But you may do more than abstain from what is hurtful: you may counteract the phosphatic tendency by a generous diet and by the exhibition of tonic medicines; bark, wine, and acids; the muriatic acid, or the nitric, may be given in such cases with vast advantage sometimes. Opium is also a remedy to be employed in this form of disease. No single drug probably has so much power in rendering alkaline urine acid, as opium. And it is indicated for other reasons; it composes the nervous anxiety to which these patients are mostly a prey.

I should state that the tendency to deposit the mixed phosphates, though sometimes idiopathic, is much more often consequent upon local disease in some part of the urinary organs, especially in the bladder and prostate gland. It is also a frequent result of certain injuries of the back.

There is yet another diathesis sufficiently common and important to claim your best attention. I mean the *oxalic*: in which there is a tendency to the formation, in the kidney, of the oxalate of lime, or *mulberry* calculus; an epithet derived from the occasional resemblance of the concretion to that fruit, in respect to colour and inequality of surface. This diathesis is not so obvious as the other two, but it is no less real.

The urine differs much in its sensible qualities from that of both the preceding varieties. Unlike the urine of the phosphatic diathesis, it is bright and clear; unlike that of the lithic, it is remarkably free from sediment. The mulberry calculus is solitary also, or recurs at long intervals; and the diathesis prevails chiefly during the prime of life. In both these particulars the contrast with the lithic diathesis is striking.

The persons who manifest this disposition are usually dyspeptic; sometimes very much so, sometimes very slightly. They are uneasy during the assimilation of their meals; suffer flatulence when the stomach is empty; prefer vegetable diets to animal; are fond of sweets, especially sugar. They are liable to boils and carbuncles, and to scaly cutaneous eruptions. According to their original temperament, they are nervous and irritable, or dejected and desponding in mind. A nephritic

attack relieves them from all this discomfort for years perhaps. When the oxalic diathesis is strongly marked, the skin, Dr. Prout says, "is apt to assume an unnatural appearance difficult to describe, but the colour of which may be said to vary from dull greenish yellow in the sanguine, to dark olive or livid in the melancholic temperament."

The formation of the oxalate of lime within the body depends either upon the non-assimilation of the oxalic acid taken with the food, or upon the mal-assimilation of saccharine aliments. Hence as a general rule, both curative and prophylactic, *sugar* and other saccharine substances should be rigidly excluded from the diet of these patients. They should avoid also all kinds of fermented liquor. The young stalks of the *rhubarb*-plant, which of late years have come into such general use in this country for tarts in the spring; and *sorrel*, of which our neighbours, the French, consume a good deal in salads, and in other ways: both contain oxalic acid; and *hard water* contains lime. Dyspeptic persons who drink such water, and eat such articles of food, and are thus daily introducing, without suspecting it, the constituent ingredients of the mulberry calculus, are very likely indeed to incur the pain, and the exceeding peril, of a renal concretion of that kind. You must see, therefore, the great importance of detecting the oxalic diathesis; and of forbidding, to those who have it, all such viands as contain the oxalic acid, and of recommending them to use pure water, even distilled water, for drinking. Animal food, and the stronger farinaceous matters, are best for them.

With respect to direct remedies for this diathesis, Dr. Prout tells us that he has seen more benefit derived from the mineral acids, alone or combined with tonics, than from any other. But the effects of these acids must be watched: and when they begin to produce a deposit of the lithate of ammonia, or of lithic acid, their use must be suspended. He recommends to patients who happen to be at a distance, the muriatic, or nitro-muriatic acid, till the lithate of ammonia, or lithic acid begins to appear in the urine; or for a *month*. "By adopting," he says, "such a course of acids three or four times in the year, and by carefully-regulated diet, I have seen the diathesis gradually subdued, and at length removed altogether."

These observations will serve I hope in some degree, as landmarks, to guide your treatment of patients labouring under

renal or vesical calculi, or presenting symptoms such as justify the apprehension that such fearful disorders may occur. It is impossible for me to do full justice to this interesting subject in these lectures; and I must refer you, for more minute information respecting it, to Dr. Frout's invaluable volume, and to Sir Benjamin Brodie's most instructive book on the *Diseases of the Urinary Organs*.

Medical Gazette, June. 3, 1842, p. 375.

4.—GENERAL TREATMENT OF PNEUMONIA AT GUY'S HOSPITAL.

By H. M. HUGHES, M.D.

The plan for many years generally adopted in Guy's Hospital, in cases of acute pneumonia, has been, to bleed the patient to approaching syncope; and to administer a pill, containing half a grain of opium and a quarter of a grain of tartarized antimony, with one or two grains of calomel, every three, four, or six hours, according to the severity of the symptoms. With this has been usually combined a saline mixture, containing twenty or thirty minims of antimonial wine. If in the course of a few hours, or the next day, the general symptoms have been unsubdued, or, after a temporary mitigation, have returned in their former severity, venesection has been repeated. It has sometimes, though not often, been necessary that the operation should be again and again performed. Triple venesections have been uncommon, and a fourth very rare. If the general symptoms, on the contrary, have been reduced, though the local affection has continued severe—or if the power of the patient has been materially diminished by venesection—the abstraction of blood by cupping has been ordered, to the amount of from six to twelve ounces. As a decrease of the disease has been evidenced by a diminution of the general distress or a mitigation of local suffering, the medicines have been less frequently repeated. They have been discontinued altogether when a more notable or persistent change for the better has been apparent, even though the mercury has not produced its specific effect upon the mouth. If the system has evidently become affected thereby, but the complaint has been still active, it has usually been discontinued, or repeated only in small and comparatively unfrequent doses.

Blisters also have been applied with good effect, in the latter stages of the disorder. The utility of these remedies in this disorder has been doubted; but I have no hesitation in stating my thorough conviction of benefit being derived therefrom, in very many instances.

This treatment, has been, on the whole, so efficient and advantageous, that little variation, and no important change, have been thought generally desirable,—and, I must add, as regards myself, have been considered even justifiable.

I have indeed not unfrequently been desirous of trying the pure antimonial, or, as it has been called, the contra-stimulant plan of treatment; but in so important a disease as pneumonia, in the proper management of which the life of the patient is frequently involved I have not felt justified in discarding means which I have so often myself seen to be effectual to cure; and in adopting others, the results of which, though highly recommended, I know principally, or almost solely, from the report of others. I must however confess, that the results of the treatment of pneumonia in Guy's Hospital—if all cases, however far advanced, and with whatever complications, are taken into the account—are not to be compared with what are stated to have been the really “triumphant” effects of antimony in this severe malady. Thus Laennec says, that out of sixty-two cases treated by antimony, only six died; and that of these six, two were moribund on their admission—two were old men of seventy, of whom one died from cerebral congestion—the fifth laboured under chronic pleurisy—and the sixth under disease of the heart. Others are reported to have lost only one in thirty, and one in forty cases. My own experience in, and my opportunities of observing the effects of the remedy in acute pneumonia, have, as I have already hinted, been limited. In one respect, however, my observation is entirely opposed to that of Laennec, who states that he has never known renewed attacks of the disease to occur when antimony had effected some, though slight, amelioration. I well recollect, however, a case of which I possess notes, treated by bleeding and tartar emetic, in the infirmary of Edinburgh, while I was a student there, in which the patient, after two venesections, the application of leeches, and the continued use of antimony, was so very much relieved as to be almost considered convalescent. The antimonial solution was however continued. But when the disease had for four

days appeared to be rapidly decreasing, and the patient was in every respect improving, the attack was renewed; and it was necessary again to bleed him to the amount of ten ounces, after which he rapidly recovered. The same has certainly happened in several cases that have fallen under my notice. In some instances, also, when antimony has been at first employed with benefit, but relapses have taken place, it has been, or has appeared, necessary for the cure, to administer calomel and opium in combination with it. A case on the other hand, which occurred to me when very young in practice, forcibly impressed upon my own mind the advantages of mercury in this complaint. It was that of a woman aged about 23, affected with well-marked acute peripneumony of the right side. She was bled, and put upon the calomel, antimony and opium plan of treatment. The second day she was much better; but on the morning of the third, was as ill in every respect as on my first visit. She was bled again, and again relieved. The medicines were continued. On the fourth day she was still doing well, but on the fifth she was as bad as ever. Venesection for the third time checked the progress of the disease. The system during the same day became fully affected by the mercury, as evidenced by the state of the gums. From that time she had no severe symptoms, but got rapidly well.

There are some cases, nevertheless, in which I believe antimony to be especially useful. I refer to those occurring in persons who are not in a condition to bear the abstraction of blood, and those in which mercury is contra-indicated. In such cases, as in the pneumonia and bronchitis of children after measles, I have occasionally administered it, and, as regards the disease for which it was prescribed, with manifest advantage. The patients have, notwithstanding, died: they have, it is true, died from another complaint; but that complaint has been, I have thought, produced by the remedy employed for the cure of the pneumonia.

From what I have myself seen, and from a consideration of the whole of the circumstances, I am disposed to believe that antimony is a very active remedy in the treatment of pneumonia; that it is more particularly indicated in slight and recent cases—those complicated with bronchitis—those in which venesection cannot be borne or repeated—and those in which mercury cannot be safely employed; that the cases treated by

it are often more rapidly relieved than by any other means, but that they are also more than ordinarily liable to relapses: that when consolidation has obviously occurred, it should not be trusted alone, but should always be given, together with mercury; that, in fact, though often very striking and rapid in its effects in the earlier stages of the complaint, it cannot be administered as a certain remedy at any time, but more particularly when there exists extensive solidification of the lung, unless in combination with calomel and opium.

Guy's Hospital Reports, No. 15, Oct., 1842, p. 312.

5.—USE OF INDIAN HEMP IN SOME CONVULSIVE DISORDERS.

By W. LEY, Esq., M.R.C.S.L.

[The reader will find an account of this drug in Article 72 of our second number, in which its anti-convulsive efficacy is strikingly shewn in cases of tetanus and hydrophobia related by Dr. O'Shaughnessy; and it must be from the difficulty of procuring the preparation that it has not been more extensively used by English practitioners.]

Mr. Ley relates some good cases in which it was very useful. The first was that of a lady who had some years previously received a shock and a blow by falling backwards on a tree, supposing that she was sitting down on a chair or stool behind her. The immediate consequences were not severe, but after months of ill health, she was supposed to have spinal disease, and confined to Dr. Arnott's hydrostatic bed for several years. The slightest motion was attended with great pain and spasms of the muscles of the back, the latter being so violent as to draw the body into the form of an arch; this was followed by relaxation. This contraction and relaxation would continue with slight intermissions for several hours, till complete exhaustion was produced, and sleep followed. A day of exhaustion was generally followed by a return of the spasms at night. Mr. Ley proceeds to say,]

I ordered a grain and a half of the extract of hemp every half hour; after the fifth dose my patient felt the effects powerfully; she complained that she was sure she had taken too much; the muscles became relaxed, and she fell into a tran-

quil, but overpowering sleep of ten hours' duration; she then awoke with little exhaustion, little of the aching pain in the neck, and pleased beyond expression at the relief she had received; the shooting pains in the back, however, continued, and at night the spasms returned; still she feared to take as many pills as would produce any very decided effect; but her sufferings were much moderated, and the duration of the disease proportionally shortened; the spinal irritation had produced a contraction of the muscles of the left leg; the foot was extended until the whole arch of the astragalus appeared to stretch the integuments anterior to the tibia, and the tendon of the tibialis anticus standing prominently like a tightened cord twisted the foot forcibly inwards. It had so much of the appearance of being dislocated, that I thought it could never resume its natural position. When the attack had subsided, I examined the foot, and found it very much improved. There is now usually so little distortion, that I am convinced that it would be rectified by a little exercise of the limb. As she still suffers under spinal irritation, the involuntary action of the muscles continues to give the foot the appearance of being considerably distorted at times. In two or three subsequent attacks she has taken the hemp with relief. She increases the dose at each attack, but it has not produced the decided effect which I have detailed. The effects which I should attribute to the remedy in this case are fright, relaxation of all the muscles, and narcotism, with especial relief to the muscles strained in the spasm.

A girl, twelve years of age was attacked with that form of chorea which affects the body with rigid spasm. The countenance had an expression of idiotcy; she had lost the power of speech; the foot was thrown forward in walking with a jerk, and the toe was twisted inwards and forcibly backwards; in the same way the arm was extended with a jerk, and immediately the fore-arm rotated forcibly inwards with rigidity of all the extensors. I gave her half a grain of the extract three times a day; it produced little apparent benefit until the third day, when she was overwhelmed with fear, the muscles became relaxed, the power of speech returned, and at the end of a week or ten days the child was perfectly recovered, having taken no other medicine. My success in these cases induced me to try the effects of the hemp in many others. The relaxation of the muscles is

remarkable in all, but it did not follow that the disease was much relieved in consequence. A man suffering from fits, and having probably disease of the brain, was seized during each fit with contraction of some muscle, which continued in that state until the next fit, perhaps five or six weeks. He came with his head drawn down to the shoulder; it had been fixed there some days. It was relieved by three grains of the extract. The man said that, although the distortion was relieved, he did not think it did his head any good at all, and refused to continue taking the medicine.

A gentleman, suffering from sciatica, took three grains of the extract at bedtime; in an hour he awoke and fancied that he was dying. The muscles were so much relaxed that he could scarcely move himself; but although he suffered great tenderness previously, he did not know in which leg he was affected; he slept heavily for some hours; when that sleepiness wore off the sciatica returned, and he felt so little relief, while awake, that he would not repeat the medicine.

These cases have given me the most perfect confidence in the power of the remedy to produce relaxation of the muscles, heavy sleep, and during its action, abatement of pain.

The following cases tend to show that its influence has a wider range:—

A coachman had been breaking-in a young horse, and by the great and constant strain on the arm, the muscles were swollen and hard, the arm so stiff, that he could not bend it, or his hand grasp his razor; on the olecranon the bursa was as large as a small pot orange. I gave him, at four o'clock in the afternoon, three grains of the extract, and told him to call in three hours, that I might repeat the dose if necessary. He did not come until next morning; he then said that his arm had been so much better the night before, that he found he could do a little work, and he thought he had better do so; he had shaved himself that morning, and he thought his arm was as well as ever. I was surprised to find that the enlargement of the bursa had almost disappeared. He has repeated the dose on a similar occasion with the same effect. He has been a great drinker, and his hand usually shakes characteristically; he remarked, on the morning after the second dose, "I do not think my hand shakes as much as it used to do."

A shipwright had a fall of twenty feet, and sprained both wrists severely. After he had been treated in the usual way three months, and had been told that, after the active symptoms were reduced, little could be done for a sprain but supporting it, he came to me, saying that he had lost the grasp of his hand, and had not, therefore, the means of getting a living. His wrists were distended so much with fluid, both in the joint and under the flexor tendons, that I fear to give a description of what I did not take notes of at the time. I tried the extract, but I did not anticipate the result. He took a grain three times a day for three weeks; he then thought himself able to work, and I have not seen him since, although he had pills still to take. His wife tells me that she is sure that the left wrist, which was the worst, is reduced one-third in size, and I do not fear to repeat it, because, we have all need to make allowance for the eye when unassisted with a measure.

To a girl, aged fourteen, who had a ganglion as large as a nut on the back of the hand, I gave twelve pills, containing one grain of the extract in each, telling her to take one three times a day. In about a week she returned to me, saying, "I thought it better to show you, sir, how much better my hand is, for that place is almost gone." The only remains of the swelling was a puffiness, almost imperceptible. I must mention also a case of another character, tending to show benefit when combined with other treatment. A child, aged nine months, supposed to be teething, but having the crowing inspiration of infants, had been treated in the usual way for teething, and fits accompanying that condition; the child had had seven fits at various intervals. The parents watched it night and day, believing that each succeeding attack would carry it off. Whenever it awoke from sleep it was seized with a spasm which drew back the head, flushing of the face, stopping the breath until it was drawn in with the peculiar crowing inspiration; the spasm then relaxed, but the child was unable to resume the natural position of the head, apparently from the effect of the relaxation of the muscles. I gave it the sixth of a grain of the extract. It soon fell into a tranquil sleep, and on awaking had no spasmodic attack. The dose was continued three times daily for a week; although very much relieved, the child still had the crowing occasionally; I then thought fit to resume the plan of regulating the bowels, but the mother did not return to

me after this visit. After six weeks I sought her out, thinking that the child was dead. She said, as soon as the bowels were cleared again, the child got quite well. The child appears to be in perfect health, although it has now at eleven months no tooth or the appearance of any to the finger.

This case has induced persons to ask, "How does it affect the involuntary muscles?" Judging from what I have observed in persons sleeping under its influence, the inspirations are perfect, but I think slow; not having had my attention directed to the subject previously, I have not yet counted the number in the minute. It would not be quite fair to consider the muscles of the larynx and neck involuntary.

The effects popularly attributed to the medicine are—"inebriation of the most cheerful kind, causing the person to sing and dance, to eat food with great relish, and to seek aphrodisial enjoyments. In persons of a quarrelsome disposition, it occasions an exasperation of their natural tendency. The intoxication lasts about three hours, when sleep supervenes. No nausea or sickness of stomach succeeds, nor are the bowels affected; next day there is slight giddiness and vascularity of the eyes." After relating cases of rheumatism, hydrophobia, cholera, and tetanus, Dr. O'Shaughnessy says, "The preceding facts seem unequivocally to show that, when given boldly and in large doses, the resin of hemp is capable of arresting effectually the progress of this formidable disease (tetanus), and in a large proportion of cases of effecting a perfect cure," "and," adds the reviewer, "we are, moreover, after reviewing the whole evidence here submitted to us, willing to join with him in the belief," "that in hemp the profession has gained an *anti-convulsive remedy* of the greatest value."

Provincial Med. and Surg. Journal, Aug. 20, 1842, p. 407.

6.—TREATMENT OF INCONTINENCE OF URINE.

By Dr. GUY, Professor of Forensic Medicine, King's College, and Physician to King's College Hospital.

Three cases of this disease occurring in young persons have fallen under my notice during the last year, and one during the present, all of which have been promptly relieved, and ultimately cured, by tincture of cantharides in combination

with tincture of opium or hyoscyamus. The only case reported as occurring in the female happened in a girl, aged thirteen, who applied for advice April 1st. She stated that she retained her urine well in the recumbent posture, and at night, but had no power over the sphincter in the erect and sitting postures. She was ordered—

Tinct. Cantharidis, $\mathfrak{mij}$.; Tinct. Opii, $\mathfrak{mv}$. quater quotidie;
Pil. Rhei c. gr. v. o. n.

15th.—Has improved regularly and rapidly, and during the last three days has been free from the complaint. She was ordered to continue the medicines to prevent a relapse, and on the 4th of May was discharged cured.

Another case occurred in a boy, $\text{æt. } 15$, who applied Nov. 23, 1841. He stated that he could not retain his urine longer than an hour at a time, and that he was obliged to rise three or four times in the night to void his urine, and that he frequently passed it in bed unconsciously. Ordered—

Tinct. Cantharidis, $\mathfrak{mij}$.; Tr. Hyoscyami, $\mathfrak{mv}$. quater quotidie.

27th.—States that about five minutes after taking each dose of the medicine, he feels a cutting pain in the bladder, which lasts about five minutes. He holds his water three hours instead of one, and gets out of bed once instead of three or four times. He has ceased to void his urine unconsciously.

Dec. 2d.—Still continues to retain his water better by day, but is again disturbed more than once during the night. Ordered

To take three drops of the Tincture of Cantharidis, and fifteen drops of the Tincture of Hyoscyamus, every night, and to continue the former dose throughout the day.

7th.—Continues better in the day; but in the same state at night.

13th.—He is now obliged to get out only once during the night. He was ordered to continue the medicine, and before the end of the month was discharged quite cured.

The same result has followed the use of the same remedies in the third case of last year, and in the one treated during the present year.

7.—IODIDE OF POTASSIUM IN ACUTE HYDROCEPHALUS.

By CHARLES FLUDER, Esq., Lymington, Hants.

[In Article 35 of Retrospect vol. iv. will be found an interesting account by Dr. Roeser of the efficacy of this remedy in the above named disease. Mr. Fluder gives some striking facts in corroboration of this practice. In two cases treated by him, all the ordinary means were used in vain. One child, in addition to strabismus, laboured respiration, convulsions, and other symptoms, had for several days together complete opisthotonos, the body being stiffly arched from the occiput to the ossa calcium.]

• In this condition, says Mr. Fluder, I suggested a trial of the hydriodate of potass, in half grain-doses, every two or three hours. The only visible effect of this, in connection with the rapid improvement of both children, was considerable diuresis, and in one much saliva dribbled from the mouth. Both recovered perfectly and speedily, and are living and healthy at this time.

In another case of a similar kind, "the pupils were dilated and immoveable, and insensible to light. There was complete paralysis of the right side, while the limbs of the left were in constant tremulous motion, the hand being frequently drawn to the head with an undulatory automatic movement. This state of things continued to the 18th, with occasional convulsions and almost entire insensibility. Wine had been administered without benefit, and I do not know how it was that I did not prescribe the hydriodate of potass a day or two earlier, for the effects of that medicine, in the two cases before alluded to, had made a considerable impression on my mind at the time. Without much expectation of doing good in this case, I prescribed the medicine as before, and with precisely the same results; not indeed instantaneous, but as an observant grandmother remarked, it appeared to improve with each dose of the medicine; the only appreciable effects being a speedy diuresis and dribbling of the saliva.

Whether the hydriodate of potass was beneficial in these cases by revulsion, as an evacuant, or by aiding the absorbents I know not: or was it by goading into action the mercury which had been previously taken?

Medical Gazette, Sept. 30, 1842, p. 24.
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8.—ON SULPHATE OF ZINC IN FLATULENT AFFECTIONS OF THE COLON, AND IN CONSTIPATION.

By GEORGE STRONG, M.D.

[Dr. Todd, in his article on indigestion, has described one kind of the affection as arising from enlarged calibre and tympanitic distension of the great intestines—atonic colonic dyspepsia. Other writers allude to “flatulent colic.”

This meteoric affection is often attended with cramps in the calves of the legs, and with cold feet, preventing sleep at night. “The breath is short, especially on ascending stairs, bowels sluggish; the swelling increases after a meal, sometimes to a very serious extent. This kind of flatulency will generally subside after existing an hour or two. Dr. Marshall Hall, speaking of the borborygmus or stridulous movements of flatus, says, “This noise is very much under the influence of respiration, and also of any state of excitement. For the most part, and especially on inspiration, it is somewhat less so, conveying the idea of the sound issuing as it were from water. Often before it ceases it resembles the plaintive sound of a dying animal.” When flatulence exists in the stomach, it is not so permanent an evil as when existing in the intestines; eructation soon takes place, or it passes off by the pylorus, or is absorbed.

“The chief function of the colon is delay. It might therefore *a priori*, have been expected that, of all the intestines, the colon would most frequently become over-distended with gaseous and other matters, inasmuch as its natural office is that of a reservoir for such matters.” “The large intestines serve at once for a temporary reservoir and a cess-pool. The nourishment triturated in the mouth passes hastily through the fauces and down the œsophagus, but in the stomach is retarded an hour or two before its passport for the pylorus can be got ready. The onward progress now, though tortuous, is uninterrupted, through the duodenum and along the jejunum and ileum; till the dregs, solid, fluid, and acriform, are emptied into the great receptaculum. Their labours ended, the organs of supply now enjoy repose. Not so the colon: it has had prisoners of varied characters, often of unruly disposition given in charge; its contents are precluded from either egress or regress, for a period often exceeding twenty hours, during which an unceasing struggle is necessary on the part of the

visceral muscles to maintain the healthy calibre of the bowel." Cullen states that, "The flatulent symptoms are to be referred to the loss of tone in the muscular fibres of the intestines rather than to any fault in the digestive fluids."

Before proceeding to speak of astringents, and of sulphate of zinc in particular, Dr. Strong quotes a paragraph from Dr. Billing on the subject of inflammation, which, he says, sheds a strong light on the view he entertains. The passage is as follows:]

"The action of the arteries is acknowledged to be contraction, whether muscular or not: and a consideration of the phenomena of inflammation and of the nature of arterial action will show, that in inflamed parts the capillary arteries are weaker in their action; that there is diminished arterial action, for the action of arteries is contraction: now the arteries in inflamed parts are evidently larger than before—less contracted, that is, acting less. An inflamed part is redder and swelled; where the vessels are visible, as in the eye, we can see that the redness is caused by the minute vessels becoming larger, so as to admit more red globules of the blood, which before admitted chiefly the more fluid and transparent part. This enlargement of vessels is not from increased action, but, on the contrary, from their action being diminished, their giving way and being dilated by the injecting force of the heart. The way to diminish the inflammation is by increasing the action of the arteries, as by cold or astringents, which make the arteries contract, that is, increase their action. So that far from the arteries in an inflamed state being in a state of increased action, one of the means of diminishing inflammation is by increasing arterial action in the part inflamed."

[Dr. Strong then proceeds with his paper as follows:]

After Dr. Percival's successful administration of alum in colica pictonum, Dr. Moseley introduced and recommended sulphate of zinc, but whether upon chemical principles, or with a view to an astringent or any other effect, is still a questionable matter. Its astringent virtues, however, remain unquestioned, and though the disagreeable metallic taste which zinc leaves upon the palate is objectionable in gargles, yet, in the cure of various discharges, as from the urethra, &c. or in leucorrhœa, this preparation of zinc is in high estimation, and in daily use.

In administering this salt in what I judge to be an affection of the bowels, not of the stomach, it is proposed,

1. By renewing the tone of the muscular fibres to control the calibre of disordered portions of the tube.

2. To cure constipation where purgatives could not be borne.

3. To constrict the mucous capillaries, and thus to diminish the secretion of gas, or to quicken its absorption.

One of the happiest and most imposing improvements of modern medicine is the cure of congestions commonly called inflammations, by the local and direct application of stimulants. Periosteal nodes are relieved by blisters; hematemesis by swallowing oil of turpentine; and ulcerated cornea yields to vinum opii; and lunar caustic exerts a powerfully controlling influence over erysipelas errans. Ergot of rye seems capable of exerting an influence not only upon the muscular structure of the womb at the epoch of parturition, or when charged with other products, and upon its capillary vessels in ordinary circumstances of hemorrhage, but, when administered for a certain length of time, of causing contraction and coagulation of the very fibrine of the blood in the large arteries of the body. Other cases of indirect specific action may be glanced at, such as hepatized lung yielding readily to large doses of oleum terebinthinæ; and could this powerful agent be always brought to bear upon the pulmonary organs, it would be as invaluable in their congestions as the tincture of cantharides is become in certain forms of leucorrhœa.*

All these specific stimulants or astringents, (for such is their effect,) be they direct or indirect, act primarily and perhaps solely upon the local nerves, which are first impressed with pain, then excited into energy, and thus cause contraction in all tissues within their province that obey nervous influence, but they cause especially contraction of enlarged capillaries. In deafness owing to a relaxed and engorged state of the mucous lining of the Eustachian tube, a gargle of alum produces retraction of the swollen mucous tissue, *i. e.* of its vessels, after which, on blowing the nose forcibly, air is found to penetrate into the cavity of the tympanum.

In connection with this subject, may be mentioned from M.

* Is the author quite serious in believing that oil of turpentine is capable of resolving a hepatized lung, and restoring the natural structure?—EDITOR *Edin. Med. & Surg. Journal*.

Parent-Duchatelet's work called "de la Prostitution dans la Ville de Paris," his remarkable instance of a woman aged 51, who had been upon the town since she was 15, and upon examination at the prison of the Madelonettes in Paris, the sexual organs presented, he says, the appearance of those of a maiden just turned eighteen years of age. This female acknowledged that she constantly used astringent washes.

These are illustrations of the meaning of the word *astringent*, or of the sense in which only a drug can be said to *astringe*. It is a coarse but not an uncommon interpretation of the word to understand that it confines the bowels. Now, if sordes or small collections of fæcal matter lodge up and down the digestive tube, this may depend upon a simple diminution of organic sensibility, the nerves of the mucous membrane are blunted in their delicacy of tact. In the case of a larger accumulation, there may be also a want of power to propel forward the mass. Where pouches form and are distended with gas, there is an interruption of the regular peristaltic motion of the intestines. These are the chief elements of functional constipation.

The internal employment, then, of similar astringents is in entire accordance with the present state of our knowledge of contractile tissues, and indeed, I suppose the salts of zinc and of copper are now pretty generally administered in this country for the cure of common attacks of diarrhœa, as well as of the passive flux into which dysentery sometimes degenerates; coaxing the stomach, by combination of a little opium, to permit their undisturbed passage through it.

If the tissue of our hollow organs obeys the same laws that regulate our external and visible parts, and medicine will take a hint from surgery, perhaps it may not be presumptuous to anticipate the substitution ere long of prompt astringents, for the tedious formula of tonics, in certain cases of dyspepsia, in many of flatulence and mild colic, and to alternate, at least, with laxatives in the cure of habitual constipation unconnected with organic obstruction.

The expressions "direct application or immediate application of astringents and stimulants," comprise the idea of the short reflex circuit which is excited in every styptic process; and such application is understood to be direct in comparison of the very distant influence which tonics exert. All contraction is excited through the nerves. The two contractile tissues now

recognised by physiologists are capillary arteries and muscular fibre. Now when the nerves of the mucous membrane are impinged by the salt, the proximity of these two tissues in the mucous and muscular coats of the bowels, involves the inclusion of both within the smallest reflex circuit that an astringent stimulant could excite, consequently, in nearly all conditions both of health and disease, these tunics could sympathise.

I will not dispute the general accuracy of Dr. A. T. Thomson's assertion respecting the action of astringents upon the digestive organs. "The mucous membrane of the alimentary canal," says he, "becomes comparatively dry, from its usual exhalations being diminished, and costiveness is the result." But I think the paragraph is one calculated to raise prejudices against a most useful class of remedies. Far from the above effects resulting, I remark that the administration of these remedies, according to my plan, is followed by a considerable production of flatus, and often by its discharge through the œsophagus as well as downwards; but in the course of a day or two, the patient who was used to loosen the waist band a few hours after a meal, now declares that "his body is certainly less, and that his wind is better for walking or mounting a stair;" there is in medical language more room for the play of the diaphragm. Soon regular, large, seldom loose evacuations make their appearance, consecutive to a peculiar sensation in the abdomen, not amounting to griping. There is occasionally a tingling like the pricking of pins and needles, felt over the trunk and even along the extremities for a short time, that cannot fail to suggest the dietetic origin of some forms of prurigo or of urticaria. In some instances where sluggishness pervaded the primæ viæ half an ounce of castor-oil appeared to diffuse the astringent salt throughout the colon, and presently to bring on its contractions.

It is preferable to prescribe sulphate of zinc in the form of pill, both to avoid the disagreeable taste, and on account of the tendency of this preparation, even in small quantities, to cause nausea. What Dr. Elliotson recommends for sulphate of copper, viz. to give it immediately upon a meal to prevent nausea, is applicable to sulphate of zinc, and where this precaution is not sufficient, I have found the addition of opium

enable the stomach to bear the full dose, with the single disadvantage of occasionally inducing thirst. Thus,

R_x. Zinc. Sulph. gr. xviii. ; Pulv. Opii gr. iii. mucilaginis
g. suff. m. ft. pil. vi. cap. un. quintâ quâq. hor. post. cib.

Where the stomach could dispense with opium, I have directed a pill to be made up with one grain of extract of rhubarb or of gentian, to three of sulphate of zinc, and taken four or five times in the twenty-four hours. It is a main object of this plan to throw at once a strong solution into the cœcum and large intestines, and, since small doses only can be passed through the stomach, they must be made to succeed each other rapidly. Occasionally after fifteen or twenty grains have been taken, there is intolerance of a further dose, and vomiting occurs even when the medicine is qualified with opium.

This occurrence I have generally found to be a criterion that the colon had resumed its healthy calibre; but it should be added, that vomiting or the excitement even of nausea are by no means essential to the entire success of the treatment.

Regarding this practice as a kind of stimulating lotion to a relaxed part, we cannot consider twenty grains but as a small quantity of sulphate of zinc, to be applied to the enormous surface presented by the colon; the mere length of which, not to mention its breadth when cut open, exceeds seven English feet in an ordinary sized man.

To proportion the remedy with confidence to the extent of the derangement, to its previous duration, to its intensity, also taking into account age, sex, temperament, mode of life, state of health, climate, season, &c., requires obviously discretion and experience; but it may be worth while to note down in this place, that an under dose, an inadequate stimulant, is apt to tease the weakened part, an effect which is commonly expressed by the phrase "tonics are not well borne." It has never in my hands produced disagreeable effects, cumulative or otherwise, though I have boldly used it for a considerable time past.

Dr. James Johnson, in 1826, published some useful observations upon the employment of nitrate of silver in a condition of the digestive organs called "morbid sensibility of the stomach and bowels;" a condition perhaps nearly akin to what has been already pointed out. But, however powerful the tonic influence of this remedy upon the alimentary canal on the system at

large, between chemical decomposition and absorption, very little of it in substance can ever reach the colon. We reject sugar of lead, another metallic astringent, from its generally noxious influence upon this viscus. Alum is objectionable, chiefly on account of its bulk, a scruple being no more than equivalent to three grains of white vitriol; add to these sulphate of copper, and we have three astringents, which in certain doses seem to be repelled by the absorbents of the stomach and upper bowels. There is reason to suppose that they pass undiminished in quantity out by the pyloric opening, then mix intimately with the chymous, and successively with the chylous mass in the duodenum and ileum, the solution becoming more and more concentrated and astringent, in proportion as the absorption of nutritious particles proceeds, and as the drug approaches the part where its services are required. The circumstances and progress are not dissimilar to those of a dose of purgative salts.

The durability of the impression thus made upon the bowel is a question of some interest in comparing the effects and weighing the respective merits of astringent and of purgative medicines. Three weeks is the shortest period within which I have known the flatulence and costiveness of the bowels return after their disappearance under the use of zinc, and in these instances the astringent plan has been resumed upon a broader footing.

The remedies that have of late been proposed, such as the employment of the galvanic circuit, the hot or cold douche thrown upon the abdomen, and bladders of ice or snow laid over the part, are at once seen to be of restricted applicability; few persons being willing to incur the expense and loss of time, and to undergo the severity and inconvenience of those heroic remedies for an ailment comparatively trifling.

The nearest approach to this principle of treatment that has yet come under my notice, is that of Dr. Warren of Taunton, who recommended "alum whey, where atonic colonic dyspepsia existed, in conjunction with gentian, tonics, &c." The routine treatment in this country is still but too often a random shooting of arrows in the dark; little diagnosis being made of this class of maladies. Alteratives, counter-irritants, an occasional purge, then a course of mild tonics and aromatic bitters, with a regulated diet and daily foot exercise, will cure this form of

dyspepsia in five or six weeks. Such was the method of the late Dr. Baillie. Various disorders may no doubt be recovered from by pursuing this plan, which is excellent, but, where an erroneous view of the case has been unfortunately taken, involves a serious loss of time.

In a valuable work professedly upon "the Stomach in its morbid States," by Mr. Langston Parker, some cases and symptoms which are detailed actually tend to show that the *bowels* were in fault, not the *stomach*. Thus chapter 13 is entitled, "of the treatment of those forms of stomach disease whose prominent symptoms are pain and constipation." And amongst the drugs prescribed for this stomachic affection, and which completely relieved it, may be picked out, rhubarb, cascarrilla, magn. sulp. and tinct. alöes;—making good, it would appear, that pleasant satire upon our art, that sagacious physicians in all ages have exhibited considerable agreement in the article of treatment, however their theories might be at variance and frequently in direct opposition.

Edinburgh Med. and Surg. Journal, Oct. 1842, p. 408.

9.—ON CHLORINE IN SCARLET FEVER.

By DR. WATSON, Lecturer on Medicine, King's College, London, &c. &c.

[In scarlatina maligna, every practitioner is aware, that frequently all his efforts are vain to check the disease. There seem to be two sources of danger—one arising from the primary impression of the contagious poison upon the body, and especially upon the nervous system, which is overwhelmed by its influence. In this case, the patient often sinks without any affection of the throat, and our chief dependence will be upon wine and bark to sustain the powers of the system till the deadly agency of the poison has exhausted itself. Another source of danger arises from the gangrenous ulceration of the throat—the system seems to be *re-inoculated* with the poisonous secretion from the throat. Wine and bark will here also be of great benefit; gargles composed of chloride of soda will be found efficacious, and if the child is too young to gargle, it may be injected into the nostrils and against the throat by means of a syringe. This will be found superior to capsicum gargles. But we think one of the most efficacious methods is that recom-

mended so strongly by Velpéau, of blowing powdered alum upon the parts by means of any tube long enough for the purpose, as two or three quills inserted into each other, so as to make one continuous tube. This method was fully explained in our 4th Number, Article 8, and will be worthy of trial by every practitioner. Dr. Watson seems to think highly of chlorine. He says:]

From several distinct and highly respectable sources, *chlorine* has been strongly pressed upon my notice, as a most valuable remedy in the severest forms of scarlet fever. My informants have stated, that whereas they formerly dreaded to be summoned to cases of that disease, they now, having had experience of the virtues of chlorine, felt no misgivings in undertaking its treatment. Since these representations were made to me, I have not had opportunities enough of trying this drug to enable me to speak confidently of its sanative power; but I shall certainly employ it in future. I presume that its disinfecting properties may, in part, account for the good it does. It probably deprives the foul secretions of their noxious qualities.

In the fourth volume of the Medical Gazette, Messrs. Taynton and Williams, of Bromley, write in high praise of this remedy. I will give you the formula for its preparation.

Two drachms of the chlorate of potass are to be dissolved in two ounces of hydrochloric acid, previously diluted with two ounces of distilled water. The solution must be put immediately into a stoppered bottle, and kept in a dark place.

Two drachms of this solution, mixed with a pint of distilled water, constitute the chlorine mixture; of which a table spoonful, or two, according to the age of the patient, may be given for a dose, frequently.

Medical Gazette, Sept. 9, 1842, p. 902.

[Whilst on the subject of scarlet fever, we will give the following observations of Dr. Watson on the protecting influence of belladonna in this disease. He says:]

You are probably aware that *belladonna* is believed by many to exert a preventive and protecting influence upon the body against the contagion of scarlet fever. Hahnemann, the author of the Homœopathic hypothesis (and thereby of much mischief to mankind), was the first to assert this. It is said that

belladonna administered in small doses causes sometimes a rash resembling that of scarlatina. It certainly is apt to produce dryness and redness of the fauces. I know nothing, by my own experience, of the alleged conservative property of this vegetable, but in the small quantities recommended, there can be no harm in trying it, *provided that* its employment does not lead to a neglect of other precautions. Three grains of the extract of belladonna are dissolved in an ounce of distilled water; and three drops of the solution are given twice daily to a child under twelve months old, and one drop more for every year above that age. It is affirmed that if this remedy does not prevent the disease, it will render it mild; and that if it be taken four or five days before exposure to the contagion, the resulting scarlatina never proves fatal.

Ibid, p. 906.

10.—ON THE PREVENTION AND TREATMENT OF APOPLEXY AND HEMIPHLEGIA.

By DR. MARSHALL HALL, F.R.S.

[This subject forms the substance of a very interesting paper read before the Medical Society of London, April 4th, 1842. We need not dwell upon that part of it which refers to plethora as the cause of, and depletion as the remedy for, apoplexy and hemiplegia, as the attention of the profession has already been too exclusively devoted to this part of the subject, forgetting that the disease very frequently arises from exactly opposite causes, viz. inanition and anæmia, besides morbid conditions of the stomach and intestines, dyspepsia, cachexia, and gout. The liver and kidneys also play their part, and the circulatory system is not an unfrequent cause of the attack, as hypertrophy with augmented impulse given to the arterial blood, or indilatation of the heart, and disease of its valves impeding the reflux of the blood along the veins. The capillary vessels, the minute arteries and veins of the brain may also be diseased and cause the mischief. Dr. Marshall Hall's observations on inanition, gout, diseases of the heart, &c., as causes of apoplexy are particularly worthy of notice. On this subject, he says:]

It was constantly his lot to see patients who were in jeopardy not from fulness but from inanition, and who had long been kept

in a state of anæmia by blood-letting, general or topical, when an opposite treatment was required to restore the equilibrium of the system, and to remove the vertigo and other symptoms threatening an attack of apoplexy. A state of pallor, a disposition to faintishness, palpitation and nervous timidity, the occurrence of the symptoms when the stomach was empty, when the bowels had been relieved, and on suddenly looking upwards, or resuming the upright position when rising from bed, or after stooping, or the recumbent position. Such were the diagnostic *signs* of a state of inanition from a state of plethora. The *history* of the case also afforded a diagnosis; for, although depletion might have appeared to afford a momentary *relief* of the symptoms, it had issued in their *aggravation* in general. An opposite mode of treatment, very cautiously and prudently adopted and pursued, would confirm the diagnosis, by affording a more permanent, though possibly a less immediate and marked relief. It was to the important distinction between the immediate and permanent relief, indeed, that he would draw the attention of the profession. In the case of symptoms portending apoplexy or hemiplegia, although these might arise from inanition, yet they were invariably *relieved* by depletion, although they afterwards returned with augmented force. This effect was very puzzling to the inexperienced practitioner. It was explained by the fact, that the symptoms ceased under the influence of a condition allied to syncope, but returned with the reaction. This subject must be carefully studied, in order that the nature and treatment of the case might be understood. He had next particularly to notice that the state of anæmia was not one of safety. In such circumstances, apoplexy and hemiplegia, with the actual effusion of blood into the cerebrum, had occurred. Such a case was related by the late Dr. Denman. It occurred in the midst of exhaustion and anæmia from protracted uterine hæmorrhage: a clot of blood was found in the cerebrum. A similar case was detailed by Mr. Travers. This latter occurred under the actual use of the lancet, and during the flow of blood from the arm. A third case occurred to Mr. Hammond of Brixton, after parturition. The patient was attacked with hemiplegia; she gradually recovered. We might therefore incautiously bleed our patients into apoplexy and hemiplegia! This statement should lead us to be very wary in the use of this remedy in doubtful or protracted cases.

Even in cases of injury of the brain, as in concussion, the same question presented itself. This point was admirably illustrated by the following remark of Sir Benjamin Brodie :—"Where bleeding has been carried to a great extent, symptoms frequently occur which in reality arise from the loss of blood, but which a superficial observer will be led to attribute to the injury itself, and concerning which, indeed, it is sometimes difficult even for the most experienced surgeon to pronounce, in the first instance, to which of these two causes they are to be referred. Repeated copious blood-letting is of itself adequate to produce a hardness of the pulse, which we shall in vain endeavour to subdue by persevering in the same system of treatment. In many individuals it will produce headache and confusion of mind, not very different from what the injury itself had previously occasioned." The pallor of the countenance, the effects of position, the effects of fasting or of an active purgative, the history of the case, must be carefully considered in forming our diagnosis. The treatment would then consist in carefully restoring the system to its state of equilibrium.

Of Dyspepsia and Cachexia.—There could be little doubt that in dyspepsia the blood itself became contaminated, and, as it were, *cachectic*. On this principle we accounted for the appearance of furunculus and paronychia; for the morbid condition of the tongue and interior of the mouth, the general cutaneous surface, the secretions, &c. He had so often observed symptoms threatening the apoplectic or hemiplegic attack, in conjunction with symptoms of dyspepsia and cachexia, that he had no doubt of the vast importance of a strict attention to this subject. That very day, (Oct. 1, 1841,) he had been consulted by a medical gentleman from Birmingham under these circumstances. One form of this affection was the following:—vertigo occurred with faintishness, sickishness, and a cold clammy perspiration; sometimes there was actual sickness, sometimes much flatus. In these cases the feet and other extreme parts were apt to be cold. The secretion of the liver was frequently defective, and the urine was apt to deposit the lithic acid salts. Nothing could be so injurious as blood-letting. In no case was the loss of blood repaired with such difficulty. The application of a few leeches frequently left a state of debility and pallor which were felt and seen for weeks. The treatment consisted in the correction of the secretions, and in the infusion

of tone and general health into the system. The compound decoction of aloes, the infusion of rhubarb, of gentian, of cinchona, singly, or better, mixed together; sarsaparilla, the vinum ferri, the bicarbonate of potass; stomachics, tonics, and antacids, in a word, were the principal internal remedies. But with these, a mild, nutritious diet, a system of gentle exercises, early hours, the tepid salt-water shower-bath, and a strict attention to the feet and general surface, by means of the flesh-brush, flannel, and a frequent change of shoes and stockings, should be conjoined. Those engaged in the harassing affairs of a London life should sleep in the country, and cherish the utmost quiet of mind.

Of Gout.—But he had frequently traced a connection between gout and its frequent attendant, the lithic acid diathesis, and the apoplectic and hemiplegic seizure. It was not merely plethora, or the opposite state of inanition, that led to the apoplectic attack. The morbid state of the blood in dyspepsia and cachexia also disposes, as he had already said, to this affection. The same remark applied to the condition of the system and of the blood, especially in gout; and, as he should have to observe immediately, the same disposition obtained in several morbid conditions of the liver and kidney. A nobleman, now no more, suffered in succession from gout and the herpes zoster, and the urine deposited the lithites copiously. He was relieved by the appropriate remedies, and became affected with an apoplectic (or epileptic) attack. A similar attack (without hemiplegia) occurred several months afterwards, and a third attack proved fatal. This gentleman was pallid, the prolabium being white. A steady perseverance in such remedies as the decoctum aloes compositum, the bicarbonate of potass, and the vinum ferri, had in other cases effectually averted the threatened evil. But he must make another remark. The vinum colchici should be given in very minute doses, as five drops thrice a-day, also steadily and perseveringly, to overcome the specific gouty diathesis. The lithic acid diathesis was not the only urinary disorder which led to apoplexy and hemiplegia. This attack, it is well known, occurs in the case of diabetes and in that of albuminous urine. Although he had designated the attack apoplectic and hemiplegic, it was sometimes more allied to epilepsy than apoplexy. The gentleman to whose case he had briefly adverted, was affected with minute ecchymosed spots

on the forehead, which he had only observed under three circumstances, viz. after severe vomiting, the effects of parturition, and the epileptic attack; when he saw him, soon after the second seizure, the insensibility had passed away, and there was no hemiplegia.

Of Disease of the Heart.—It has long been supposed that disease of the heart is a cause of apoplectic seizure, and hypertrophy of that organ has been fixed upon as the most influential in this respect. On this question the pathologists of France were much divided. Of the two latest writers on the subject, M. Andral was of opinion that hypertrophy was really a frequent cause of apoplexy; whilst M. Louis was of the opposite opinion. There could be no doubt that, *cæteris paribus*, hypertrophy of the heart would co-operate in inducing the apoplectic attack; but he thought that a much more energetic cause of apoplexy, and of congestion and hemorrhage in general, was that form of disease which impeded the return of the venous blood from the brain, viz. dilatation and valvular disease. The worst form of hypertrophy might be unattended by symptoms or appearances of congestion; but no severe case of dilatation or valvular disease ever existed, without lividity of the countenance, dozing, and other appearances and symptoms of apoplectic tendency. Altogether, however, we wanted a series of cases, carefully taken and analysed, and statistically given, to *establish* the truth of the real influence of disease of the heart in inducing the really apoplectic seizure.

Diseases of the Capillary and Minute Vessels.—The influence of this cause of apoplexy is placed beyond doubt by post-mortem examination. Sometimes the morbid appearance is a dilated condition of the capillaries; sometimes an ossified condition of the minute arteries (?); sometimes a minute aneurism. Another important topic is that of “rammollissement,” or softening of the brain, as the *cause*, and as the *effect* of apoplectic or hemiplegic seizure. In resuming the subject he might remark, that it was not plethora alone which predisposed to the apoplectic and hemiplegic attack; the very opposite condition of the system, or anæmia, whether it arose from loss of blood by blood-letting, or hemorrhage, or from defective sanguification, was not free from this danger; dyspepsia and cachexia, as they induced external disease, as seen in furunculus, paronychia, &c., might also induce a paralytic affection, a

morbid condition of the blood taking the place of plethora or anæmia.

Of Muscular efforts.—He might make the same remarks in regard to muscular efforts, which he had done in regard to disease of the heart—those efforts which opposed resistance to the reflux of the venous blood were much more efficient causes of the apoplectic seizure than those efforts which augmented the momentum of the arterial blood. Thus, we rarely heard of the occurrence of apoplexy during the violence of the race, during the ascent of mountains, &c., but such an occurrence at the water closet was by no means uncommon; and we all knew how apt the parturient efforts were to induce congestion of the brain, and the consequent apoplectic seizure. It would be most interesting to correct our ideas on these subjects by a cautious appeal to facts.

London and Edin. Monthly Journal of Med. Science, Aug. 1842, p. 778.

11.—ON THE PATHOLOGY AND TREATMENT OF TUBERCULAR PHTHISIS.

By SIR CHARLES SCUDAMORE, M.D., F.R.S.

Dr. Carswell, in his interesting article on tubercle, defines it as follows:—"Tuberculous matter is a pale yellow, or yellowish-grey, opaque, unorganised substance; the form, consistence, and composition of which vary with the nature of the part in which it is formed, and the period at which it is examined." He adds, "the prevailing opinion among pathologists is, that the seat of tuberculous matter is the cellular tissue of organs; that it may, however, be formed on secreting surfaces, as in the mucous follicles of the intestines, perhaps in the air-cells and bronchi, the surface of the pleura, peritoneum, and likewise in false membranes, or other accidental and new products, and in the blood itself." He states it "to be very rare that tuberculous matter can be detected in the blood contained within its proper vessels; but that it is frequently met with in this fluid in the vessels of the spleen." He appears, however, to believe that it is contained in the circulating blood. He observes,—“As a morbid constituent of the blood, we can take no cognisance of the existence of tuberculous matter, otherwise

than through the medium of the secretions, or until this fluid has ceased to circulate. Then it is seen to separate from the other constituents, the serum, fibrine, and colouring matter of the blood, and is distinguished by the peculiarity of its physical characters." He is of opinion that the external configuration or form of tuberculous matter depends on the particular organ, tissue, and situation in which it is produced.

[It seems, however, from the different opinions of Bayle, Laennec, and Louis, that the theory of tubercle is still an unsettled point, whether we look to its first formation and progress, its localization, separate or co-existent in its different forms, part at which softening begins, vascularity or the contrary, and some other particulars. Sir C. Scudamore has seen the following several forms of tubercle:—]

First. The minute (miliary) granulation appearing either semi-transparent, or almost wholly transparent, always more or less in clusters, lying immediately under the pleura, and in different parts of the parenchymatous structure.

Secondly. Granulations of rather larger size than the last, of a grey colour, usually very abundant, and disseminated throughout the lung.

Both of these kinds of tubercle often become aggregated into close masses, and the second especially; the grey miliary so coalesce, that from this cause and from the albuminous part of their composition becoming more dense, they acquire a yellowish-white appearance. The miliary which I have first described sometimes passes into this, the second.

Thirdly. The yellowish fibrinous-looking tubercle, of a size varying from a seed of pearl-barley to a small almond, variously located in and about the lung, not numerous as the other kinds, sometimes even solitary.

Fourthly. Infiltration of softened tubercular matter in the tissues of the lung, and in the bronchial tubes.

[All the varieties of tubercle when minutely examined present, according to Sir Chas. Scudamore, one general result, namely, the existence of albumen in their composition with occasionally slight evidence of fibrine, always of lime in abundant proportion and in varying degrees of combination with carbonate and phosphoric acids, more rarely with muriatic.]

Tubercle, when examined microscopically, is found to consist of an assemblage of corpuscles of variable size and shape, sometimes containing granular matter of exceedingly minute granules; and in some of the smaller kinds of tubercles, as in the grey miliary, besides the constituents above mentioned, there are cells of a more regular form and size, and larger than the corpuscles. In the crude or firm tubercles the corpuscles are closely packed together, and the granular matter scanty; whereas, on the contrary, in the larger and softer kinds the corpuscles are easily separable, and the granular matter in great abundance. The form of the corpuscles is for the most part globular or oval, but in the softened tubercles they are very irregular as to their shape, being often elongated and fusiform. They vary in diameter from about 1-3000th to 1-2000th of an inch. The granules, also, are very variable as to their size. Mixed with them are found myriads of minute globular bodies, scarcely capable of being measured by our ordinary micrometers, being much less in diameter than 1-25,000th of an inch. These are most abundant in the soft tubercles, which, in fact, appear to consist of little or nothing else but granules and broken down corpuscles. The cells are more constant in size and shape than any other constituents, and average in diameter about 1-1500th of an inch. Nuclei are sometimes apparent, but as the tubercle increases in size the cells becomes disintegrated, and finally disappear.

[The vascularity of tubercle is a very questionable circumstance, and although some writers have asserted its vascularity, the generality of our standard authors deny it. Dr. Carpenter says, "The difference between the deposit of tubercle and that of healthy organizable material would appear to be this—that the former is composed of the albuminous constituents of the blood, a mere chemical compound which is not prepared to undergo organization until it has passed through the condition of fibrine; whilst the latter is a portion of the vitalized fibrine, which possesses within itself the tendency to organization, and only requires the contact of living membrane to enable it to pass into a regular structure." On injecting a tuberculated lung, the injection will generally, if not invariably, be found not to enter into the tuberculous matter. The following conclusions are adopted by Sir C. Scudamore:]

Tubercle is wholly free from vascularity; invariably it contains

cells and granules, and in every kind of tubercle of the same structure. This, therefore, is the most essential part of its constitution; and I think it may be reasonably suggested that the tubercle is nourished and receives its growth by means of the cells, on the same principle that the non-vascular tissues are nourished by means of cells, as so ably shown by Mr. Toynbee; and as the plant receives the sap through the medium of cells instead of straight vessels. In this view of the subject we cannot pronounce tubercle to be in-organic; it is not heterogeneous, for it is a compound substance; and not wholly extra-vital, although certainly the lowest degree of vitality only can be assigned to it.

Another question has arisen, Where is the tubercle first formed, in the blood itself, or in the exact part where it is found? The favourite conclusion of those who have written on the subject appears to be, that the tubercular germ circulates in the blood, and is arrested by the extreme capillaries of the lungs, or other viscus or tissue. In answer to this opinion I have to observe that by the aid of the microscope the peculiar cell of tubercle is never found in the blood, and consequently that it must be a local formation. Tubercle is situated in various parts of the lung, as in the cellular tissue, without and within the air-cells and bronchi, but never external to the pleura. From the fact which I have witnessed in one examination by the microscope, that the blood of a person labouring under tubercular phthisis contained pus-globules, so called, more abundantly than the blood of a person in health, it has been suggested that hence some explanation may be offered of the origin of tubercles; but such an hypothesis must vanish when we consider that these particular globules abound in the blood of persons labouring under various kinds of disease, and are never absent from the blood of those in health; so that, in the present state of our knowledge, we are not enabled to theorise on the so called pus-globule (now known to be fibrine) as a morbid phenomenon. Dr. Martin Barry considers that the pus-globule is the altered nucleus of a corpuscle of the blood.

Pathology of Tubercle.—I am led to entertain the opinion that the formation of tubercular matter may be referred to a specific virus or poison in the blood, which I call the tubercular, and which expends itself in determining the formation of tubercles in different parts, but in the lungs more especially, such

tubercular product being *sui generis* in regard to the structure of its cells, as already explained. The cells of the tubercle of phthisis differ from those of the cancerous tubercle, and from what are found in scrofulous matter. In other specific diseases, as cancer, syphilis, hydrophobia, small-pox, and more which might be named, we must of necessity assume that there exists a special poison capable of producing the distinct phenomena of disease relative to each particular virus; although it is in vain that, with all the advances of chemical knowledge, we endeavour to detect the presence of such virus in the blood. If we examine the contents of a small-pox pustule, we cannot, either by chemical tests, or by the aid of the microscope, discover any important difference between such pus and that of an ordinary ulcer.

Every distinct animal poison produces morbid phenomena in the constitution peculiar to itself. It is not more difficult to believe that a tubercular poison in the blood should give rise to the formation of tubercles in different parts, than that small-pox virus should produce pustules on the skin.

I conceive that this virus is sometimes transmitted from the blood of the parent to that of the child, developing itself in its effects at different periods of life. Of the existence of tubercles in the fœtus we find two examples related by Mr. Langstaff; one by Husson; two by Ohler; and one by Chaussier. I examined the body of an infant that died in a state of extreme emaciation at the age of four months, the mother of the child having been in the last stage of tubercular phthisis when she gave birth to it. I never witnessed so remarkable and extensive a display of tubercles, both miliary and of a larger size; the former semi-transparent, the latter grey in colour. The lungs on each side, both upper and lower lobes, the liver, the spleen, the mesentery, and peritoneum, were universally studded with tubercles. I cannot relate a more striking instance than this of the tubercular disease in its highest activity, or more favourable to my theory that a specific virus in the blood is the source of tubercular formation. The child had received no other food than at first its mother's milk for a short period, then cow's milk diluted, and afterwards for about a fortnight, breast-milk from a wet-nurse.

Of the Softening of Tubercles.—Eminent pathologists have differed on this point: Laennec asserting that it always begins

in the centre; Andral that it may equally take place at the circumference. Dr. Carswell observes, that "softening begins most frequently at the circumference of firm tuberculous matter, or where its presence as a foreign body is most felt by the surrounding tissues." He also states, "the most important fact connected with the chemical composition of tuberculous matter is, that either from the nature of its constituent parts, the mode in which they are combined, or the conditions in which they are placed, they are not susceptible of organisation, and consequently give rise to a morbid compound, capable of undergoing no change that is not induced in it by the influence of external agents." He thinks with Andral that the softening process is to be ascribed to the admixture of pus secreted by the tissues subjected to the stimulus of tubercle as a foreign body, and not to any change originating in the tubercle itself."

Neither of these authors appears to have been aware of the cellular structure of tubercle, the most essential part of its constitution. I think it too much to assert that the tubercle is incapable of undergoing any of the softening change from an alteration in its own constituent parts. The low degree of vitality which I conceive a tubercle to possess by virtue of its cells may not be sustained, and then a decomposition of its chemical constituents may take place. Yet I am quite of opinion that, as a general rule, the change in the tubercle from a consistent, and more or less firm, to a softened state, is secondary, and consequent to the ulcerative action which is set up in the tissues in which it is situated, and to which it has proved an irritant.

It is a remarkable circumstance, however, that in some cases the lungs have for a long time tolerated the presence of tubercles, without affording the characteristic signs of their presence—without cough being induced, or symptoms of pulmonary irritation of any kind having occurred, or not so as to excite notice. Occasional instances have happened of persons dying from some sudden accident, that on being examined have afforded the discovery of tubercles in the lungs, no complaint of pulmonary suffering having been made during the lifetime of the individuals. Numerous authors have rendered a similar statement. Yet I do not believe that the development of the tubercular disease, to the extent of the formation of tubercles, can ever take place, without any injury or inconvenience to the

system. Although the symptoms may not always be characteristic of pulmonary affection, yet they will exist in some shape, and the general health will be more or less interrupted, openly or insidiously.

When the tubercles have softened, and when the expectoration necessarily is in part composed of the expulsion of some of the contents of a cavity, the experienced eye will readily detect the debris of tubercles occasionally appearing, and which commonly resembles small morsels of softened cheese: the whole mass of the sputum in this case being composed of highly morbid bronchial mucus; of ill-conditioned and imperfect pus; and the liquid tubercular matter. By examination with the microscope, you do not find the perfect pus-globule as in pure pus. In the sputum of acute bronchitis, and in the morbid condition of the membrane which so frequently attends the tubercular formation, you will find, by the microscope, pus-globules more or less perfect, in conjunction with the mucous-globule.

It is relatively a favourable sign when the sputum is without offensive odour. When this prevails in a high degree, it indicates a degenerate condition of the lung, and that dangerous ulcerative action is going on. It must always be an encouraging circumstance when the quantity of expectoration lessens; when from having been offensive it loses odour; and when losing its morbid characters of greenish or rust colour, of raggedness, and foul purulent appearance, it approaches gradually to the condition of mucus not greatly changed from that belonging to slight catarrh. The admixture of blood in the sputum is to be distinguished from the more serious occurrence of hæmoptysis; for the one may be considered as an exudation from the congested mucous membrane; the other, a consequence of ruptured vessel.

The examination of a portion of the sputum interposed between two pieces of plate glass before the flame of a taper is instructive: when the secretion is abounding with pus-globules, more or less of the prismatic colours will appear, and a well-defined ring; and *vice versâ*, as they may be few in number there will be little more than a field of orange colour; when it is simply mucous, there will be little or no colour appearing. This simple optical method, therefore, is to a certain degree instructive; but the microscope is more instructive. When

tubercular matter is coughed up in admixture with the morbid mucus and imperfect pus, the peculiar cellular structure of tubercle with its granules will be shown by a microscope of suitable power.

It is demonstrated that respiration can be carried on for the mere purpose of the continuance of life, with very little of the lung left free from disease, and makes us know that if we can improve our art so as to bring about the healing of a cavity, and conquer the tubercular diathesis, or, in other words, effectually alter the state of the blood, so as to prevent future tubercular formation, we may have the satisfaction of restoring the patient from a very discouraging state of organic disease of the lungs to tolerable, although not perfect, health.

In reflecting on the nature of this disease, I think it is obvious we have to look to two important circumstances; first, and the most important, the specific morbid condition of the blood; and, next, its consequence, and that is which is the most serious and the most engaging our present consideration, the production of tubercles in the lungs.

By some authors the immediate production of tubercles has been referred to local inflammatory action; but the error of this opinion is shown by the fact, that abundant examples may be found of the most marked evidence of tubercular formation and ulcerated cavities, without any of the signs of inflammation having existed in the immediately surrounding tissues. This point has been well argued by Laennec, who pronounced a very positive opinion against the inflammatory origin of tubercles.

Anatomy of the Lungs.—The exact anatomy of the bronchial tubes and air-cells of the lungs has frequently been the subject of controversy, and up to the present day may be considered to remain *sub judice*.

A paper of great interest has lately been read to the Royal Society, and is in course of publication in the Transactions, contributed by Mr. Addison, of Malvern, who has often distinguished himself in pathology. The following compendious view of the subject, founded on the author's paper, will, I hope, correctly express his opinions:—In the fœtus the bronchial tubes enter the lobules of the lungs. Their coats become extremely thin, and there are little folds in their interior. As yet, in the fœtus, there are no air-cells, but at birth the whole

of the delicate extremities of the bronchial branches in the interior of the lobules become distended into air-cells, which are formed by the pressure of the atmosphere acting on the delicate expansible membranes which constitute the *intra-lobular* branchings of the bronchi. The pressure, acting more between the little folds of the membrane, forms the cells.

I know that Mr. Addison entertains the following opinion in regard to aeration: that the air-bubbles which fill all the cells, are seldom or never changed; that the columns of air expired or inspired is not more than sufficient to occupy the *tubes*; that his *lobular passages and the air-cells* have their oxygen renewed by the inhibition of *air-bubbles*, which, in the minute structure of the lung, are so small, and adhere to the tissue so strongly, that they cannot be expelled by any force short of lacerating the cells, and therefore they are not likely to pass in and out during respiration.

In the progress of our subject, the important question now presents itself,—What are the chief leading circumstances which induce this most frequent and most fatal of all diseases, consumption? *Hereditary* predisposition. What is commonly called a family tendency to consumption, is unfortunately an affliction of ordinary occurrence. Where this evidently exists, or even when suspected, more than usual attention should be paid to the early management of the constitution, and every care should be used towards establishing the strength of the body. Of such importance is free and regular exercise in the open air, that it is even better to run the risk of getting an occasional cold than forego this advantage, using, of course, the ordinary protections of clothing and other means against bad weather. It is absolute destruction to confine children to very warm rooms, allowing them to go into the open air only on a fine day. I have now and then witnessed with deep regret the commission of this lamentable error. A more delicate management is of course required for girls than boys, but for them even I would earnestly advocate the principle of free exercise out of the house on every day when not prohibited by bad weather; the range of the garden or the fields with unshackled limbs, and the happy buoyancy of nature; rather than the stately formal walk, which does not sufficiently conduce to that active employment of the muscles necessary to give a quickened circulation, increase the play of the lungs, and bring

bloom into the cheek. In certain pneumatic experiments, it is shown how little expansion, comparatively to a full one, the lungs undergo in ordinary passive respiration.

I think it probable that in this the ordinary action of the lungs, the upper lobes expand much more than the lower; and that their delicate texture being more exposed, may a little explain why tubercles are so much more frequently found in the upper lobes than in the lower. If my idea be correct, the upper lobes must have the most immediate communication with the atmosphere, and be the most subject to its several influential conditions.

On the Inhalation of Iodine.—Although the tubercles of the lungs are, in my view of the subject, the offspring of a morbid cause existing in the blood, and therefore not the whole disease we have to treat, yet they constitute the most important feature of the disease, and must always engage our most serious consideration. As foreign bodies only, they must be more or less a source of irritation to the lung. I think it highly probable that they may differ very materially in their degree of virulence, and that they may not produce their whole effect simply as foreign bodies. I have repeatedly found large calculi strongly impacted in the parenchyma without any evidence of irritation being produced, even when the portions were angular, and much more likely, one would suppose, to create irritation than soft substances. Also, we know that the lungs will sometimes tolerate the presence of tubercles for indefinite periods of time. But in whatever way we reason on the subject, it must be highly desirable to effect the removal of tubercles from the lungs, for independently of their being usually so direct a cause of dangerous irritation to the organ, they do either by their pressure on the air-cells, or by an actual occupation of them, materially interfere with regular aeration and the decarbonisation of the blood. Chronic bronchitis is always more or less an attendant on the tubercular condition when at all active, and hence theory must be in favour of applying to the affected parts a medicinal agent of sufficient power to produce a decided change of action. On such grounds I was led, about fourteen years ago, to make a trial of the inhalation of iodine in the way of inhalation, as being a medicine highly capable of stimulating the absorbents of the lungs, which are not few, to remove tubercular matter; of inducing a healing process in a cavity when

formed; and of correcting the morbid action of the bronchial mucous membrane. Having in my book on inhalation entered upon much explanation of this remedy, with cases in illustration of my doctrine, I may be allowed to be brief on the present occasion. The addition of a *saturated* tincture of conium has a very useful effect in softening the action of the iodine, and in soothing the mucous membrane.

Experience has amply justified my recommendation of this treatment, and I have had the happiness of succeeding in very numerous cases, in which, according to all my former experience with the old methods of practice, I must have failed. It cannot be the reproach of any treatment that it should fail in the worst cases—those which are either become incurable from long neglect, or from their originally inveterate nature. This truth I also assert, that even when the case is too urgent to admit of success, certain relief will be afforded.

It is essential that a glass inhaler should be used; that it should be of good construction, and well fitted with capacious tubes; for then the patient, however feeble his respiratory powers, can inhale without any difficulty. The patient should be instructed to inspire with so much effort as that, without being painful or fatiguing to him, the volatile properties of the mixture may traverse the air-passages to a sufficient extent. As shown in my pneumatic experiment the natural force of ordinary inspiration would be very insufficient; and this fact, together with the great advantage of administering an exact dose, and gradually and skilfully increasing the proportions, must, I think, convince every dispassionate person of the great superiority of this *exact* method over that occasionally recommended, of having the vapour of iodine diffused over the apartment, in order that the patient should breathe in such medicated atmosphere.

I find no reason to alter the formula of the iodine solution which I have already more than once published, and which is as follows:—

R Iodine; Iodide of Potassium, aa, gr. vj.; Distilled Water, $\frac{3}{4}$ v 3vj; Alcohol, 3ij. M.

To be used by inhalation.

I always begin with a small proportion, in no case less than 3 ss, and in progress never exceeding the total dose of 3 v,

directing two-thirds of the quantity to be used for the first half of the time, and the other third for the remainder; for otherwise, so volatile is the iodine, that the inhalation would be too strong at first, and too weak at last. The tincture of conium I use in 3 ss doses, and this being much less volatile than the iodine, need not be increased, unless the mucous membrane is unusually irritable. The inhaler should not be quite half full with water at 120°, or equal parts of cold and boiling water which give about this temperature, and which should be maintained by immersing the inhaler in a jug of hotter water, say 130°. Observations, not of full approval, have sometimes been made respecting this remedy by those who have either never used it, or made only very imperfect trials of it, and evidently without that confidence in its utility which is necessary to the satisfactory result of any medical treatment that is adopted. Unless the physician himself feel confidence, he cannot inspire his patient with faith; and which, to a certain degree, is very necessary to the success of medicine.

It has sometimes been called merely a local treatment, and were it so, how much deduction would be made from its importance? But even this criticism is not just. The inhalation acts upon the whole system, as I have had proof of by witnessing, even inconveniently, the constitutional effects of iodine; but to this admission let me add, such disagreement has not happened in so large a proportion of instances as one in a hundred. When I deliberately affirm this as a truth, surely the most timid cannot shrink from the remedy. What medicine is there of any power which does not occasionally disagree in particular idiosyncrasies of constitution? Further, I never, in important cases, confine myself to the use of inhalation, but have recourse to all other things to which my judgment directs me; and hence another reason why the fastidious ought not to think lightly of the treatment; or call it superficial.

I am deeply and conscientiously convinced that in proportion as the inhalation of iodine and conium in tubercular phthisis and chronic bronchitis is more used and really understood, and done justice to, so will its high value become known, and its good name be established. I pronounce it to be a very far superior remedy for inhalation than chlorine, creosote, or any other means which have been tried. In no other medicinal combination, indeed, can I find an approach to the curative

power which this in a large degree possesses. This practice should be persevered in for a great length of time, beginning with twice a-day, soon increasing to three times, then decreasing to twice, afterwards to once, and even occasionally suspending its employment; by which plan, on its renewal, its efficacy may be the greater. As to the time also of continuing the inhaling; five or ten minutes may be mentioned for the beginning, to be increased in progress to fifteen, twenty, or twenty-five minutes.

For the sake of humanity, then, I recommend the treatment; and will repeat what I have said in my preface to the work before mentioned, "It is not on selfish grounds that I advocate the practice. What concerns my reputation or advantage, is personal and transient, and of little moment; what relates to science and the interest of mankind, is for all ages, and of inestimable importance."

As an internal alterative, I think very favourably of the following mixture, which may be taken by itself, but usually agrees better when mixed with an equal proportion of very hot milk; two, or three, or four tablespoonfuls for the dose, two or three times a-day:—

℞ Bruised Sarsaparilla, ʒ iij; Lime Water, ʒ xij.

Macerate for twelve hours and strain.

℞ Of the strained liquid, ʒ xj; Syrup of Sarsaparilla, ʒ vj; Alkaline solution (Brandish), ʒ ij to ʒ iij; Tincture of Orange bark, or Compound Tincture of Gentian, ʒ ij to ʒ ss; Iodide of Potassium, gr. ix, to gr. xii.

Make into a mixture.

After a longer or shorter course of this medicine, I prescribe a preparation of quinine with the aromatic elixir of vitriol, and with or without the addition of small doses of sulphate of iron; or, in other instances, I am led to prefer that excellent preparation, the *mistura ferri composita*.

The usual practice of giving expectorants, with a view to free the bronchial morbid secretion, I disapprove of, as tending to debilitate the stomach, the powers of which it is so important to strengthen and improve; and for this object of free expectoration, I trust to inhalation and means that support the strength.

The addition of a saturated tincture of ipecacuanha to the inhaling mixture, is an useful incentive to expectoration. It is always important to the invalid that a good portion of sleep at night should be obtained. Sometimes this advantage will be allowed by the disease; but in the majority of cases, aid is required on account of the irritation of cough, and of nervous restlessness.

The following soothing syrup I have had reason to approve :—

R_x Solution of Acetate of Morphia, (gr. j to gtt. vj),
gtt. x; Dilute Sulphuric Acid, 3 ss to 3 j; Syrup of
Tolu, 3 ix.

Make into a syrup.

Of this a teaspoonful is the ordinary dose, mixed with a little water; and it may be repeated in the night if necessary. If insufficiently anodyne, a small portion of Battley's sedative may be added. If the stomach require the addition of a stomachic ingredient, the tincture of cinnamomi composita is the best that I can mention.

Night perspirations are sometimes so excessive, as quickly and seriously to increase the debility of the patient. I have found much advantage from the free application to the chest before and behind, and the armpits, of a lotion composed of acetic acid and water; substituting for the two proportions of water, the same of an infusion of pure tannin; two drachms to be macerated in twelve ounces of hot distilled water for twelve hours, and then strained.

One of the most distressing complications with pulmonary tubercles is a tubercular formation on the peritoneal coat of the intestines, or in their mucous follicles, so frequently accompanied with ulceration, in patches, of the mucous membrane. Diarrhœa of a most troublesome character ensues, and the patient is quickly reduced to great debility. I attended a lady who had recovered in a remarkable manner from pulmonary tubercular phthisis, and having remained well for several years, was seized with all the symptoms of intestinal irritation from tubercles. The vital powers became so prostrate, I thought she would have sunk. Much advantage was derived from small lavements of a strong decoction of pomegranate and starch, with the addition of tincture of opium, and cordial stomachic

restringents with opium, and as supporting a diet as the stomach would allow, with the addition of suitable portions of brandy and wine in the respective nourishments, or in water. She quite recovered, and has not had any return of the pulmonary disease.

Counter-irritation is a part of auxiliary treatment too important to be overlooked. I think it is chiefly called for when there is a tendency to hæmoptysis or pleurisy; and for the most part I am induced to give the preference to small blisters. In some individuals, however, this treatment causes so much irritation and consequent depression of strength, that it makes a doubtful balance of good and evil. Less of this inconvenient consequence results from the use of the acetic solution of cantharides as originally prepared by Mr. Garden, of Oxford-street, according to my prescription; but although it takes effect promptly and with certainty, it does not act so much as the plaster of cantharides on the deeper-seated vessels, and causes a thinner discharge.

Lancet, Aug. 6, 13, & 20, 1842, p. 644, 685, & 714.

12.—TREATMENT OF ACUTE RHEUMATISM.

By the Late DR. HOPE.

The late Dr. Hope published in 1837 an account of a particular mode of using calomel and opium in this disease, which mode he learned from Dr. Chambers, and which is followed, more or less closely, by many other physicians. It is said to be so successful, that even the details of it ought to be known. The plan is described as follows:—After a full venesection, or even two, in the robust, but without any bleeding in the feeble and delicate, eight or ten grains of calomel, with a grain and a half of opium, according to the age of the patient and the severity of the case, are administered every night; and followed every morning by a strong black dose, sufficient to ensure four or five stools at least. With this treatment is combined, thrice a day, a saline draught containing from fifteen to twenty minims of the *vinum colchici*, and five grains of Dover's powder. When the pain and swelling are greatly abated, if not almost gone (which Dr. Hope affirms to happen often within two days, and almost always within four), the calomel is omitted; or it

is omitted sooner if the gums become at all tender. The opium, however, is continued to the amount of a grain or a grain and a half at bed time ; and in severe cases a grain also at noon is added : and the colchicum, and the black dose, are still given as at first. Dr. Hope considers it a case of exception if the patient be not well in a week.

The following are stated by Dr. Hope as being the great advantages of this plan of procedure:—1. That the patient is generally sound, well, and fit for work, in a week or ten days after the pains have ceased. 2. That the gums are rarely affected, especially if you previously ascertain that the patient has not a morbid susceptibility of mercury. 3. That it is rare to see inflammation of the heart if the treatment is early begun ; not oftener, he thinks, than in one of a dozen cases. 4. If the slightest symptom of endo- or peri-carditis *does* supervene, a few extra doses of calomel and opium, given every four or six hours, will generally affect the constitution in twenty or thirty hours, which, with two or three cuppings or leechings on the region of the heart, almost always places the patient in a state of safety.

Medical Gazette, July 15, 1842, p. 581.

13.—ON BLEEDING FROM THE URINARY ORGANS.

By DR. WATSON, Lecturer on the Practice of Medicine, King's College, London, &c. &c.

[Blood, of course, alters the natural colour of the urine whenever it is mixed with it ; it may cause it to assume a bright red or a dark hue, to become brown like coffee or even approaching to blackness. But when the urine is so discoloured, we are not always to conclude that it is by the admixture of blood, as many substances may cause it to assume a variety of appearances. The prickly pear or Indian fig, the cactus opuntia of botanists is one of these substances—many others may be named, as beet root, madder, &c.]

When blood is present in any considerable quantity, a portion of it subsides to the bottom of the vessel, and may be recognised without any difficulty. And even when there is not enough blood to give a marked and characteristic deposit, a very small admixture of it will be found to disturb the natural

transparency of the urine, rendering it of a smoke-brown, or dull cherry colour: whereas the reddish or pink urine which contains no blood is clear and untroubled; and if, on cooling, it throws down a sediment, that sediment may be redissolved by heating the urine—a result which does not take place when a portion of blood has been deposited. Another rough test is, that a mixture of urine and blood tinges a piece of white linen dipped into it, of a red colour. But the simplest and most satisfactory criterion is afforded by gradually raising the suspected urine to the boiling temperature. If it contains blood, a greyish-brown flocculent precipitate, consisting of coagulated albumen tinged with the colouring matter of the blood, will form, and gradually subside, and leave the supernatant liquid clear, and with its natural tint.

We have by no means accomplished the diagnosis when we have merely ascertained that there is blood in the urine; and that the case is a case of hæmaturia. The question remains, of what is such hæmaturia a sign? The blood emerges from the urethra, but it may have been poured out at any point of a long and somewhat complex tract of mucous membrane. It may have proceeded from one or both of the kidneys; from each or either ureter; from the bladder; from the prostate gland; or from the urethra.

Hæmaturia strictly idiopathic must be very rare. Cullen remarks that neither he nor any of his friends had ever met with an instance of it. I shall mention presently the only example of hæmorrhage from the urinary organs, apparently idiopathic, that has fallen under my own notice.

Blood is excreted with the urine in that acute affection of the kidney which I have already spoken of as lying at the root of most, if not all cases of febrile dropsy. The albuminous urine proper to the chronic form of Bright's disease sometimes contains the colouring matter as well as the serum of the blood. Hæmaturia is occasionally, I believe, vicarious of some other hæmorrhage, and especially of bleeding from the hæmorrhoidal vessels: so that it is always right, in obscure cases, to inquire whether the patient has been habitually subject to hæmorrhage from the rectum; and if so, whether that hæmorrhage is suspended. These cases have even been called *hæmorrhoides vesicæ*.

Hæmaturia occurs also, independently of any strictly local complaint, in the course of certain disorders which affect the

system at large; especially in scurvy and purpura hæmorrhagica. Bloody urine is sometimes a symptom, and one of the most fatal augury, in typhus fever, small-pox, measles, and the plague.

But setting aside these more general forms of hæmaturia, let us inquire what local affections of the urinary organs themselves may give rise to hæmorrhage; and how, under different circumstances, we are to interpret this symptom.

One very common source of hæmorrhage from the urinary passages, is the presence within them of calculous matter. The pressure occasioned by the aggregation of the earthy mass, when it is formed in the kidney, or by its accidental change of position, lacerates, or lays open by ulceration, some of the smaller vessels with which it is in contact. And in those cases in which a calculus descends into the bladder, and is ultimately voided, it may, in succession, give rise to hæmorrhage, first from the kidney from which it is separated; secondly, from the narrow tube of the ureter through which it is forced; thirdly from the bladder which it enters, and wounds, or irritates; and fourthly from the urethra in the last stage of its progress out of the body.

There will be the same liability to hæmaturia, if the concretion, instead of coming down from the kidney, is formed originally in the bladder. The appearance of blood in the urine suggests, therefore, in many cases, the fearful suspicion, that there is, or is likely to be, a stone in the bladder. Dr. Heberden, in his *Commentaries*, says "Urine made of a deep coffee colour, or manifestly mixed with a large quantity of blood, has within my experience been very rarely the effect of any thing but a stone in the urinary passages. I therefore suppose a strong probability of this cause, whenever I see this appearance."

Again, blood may proceed from the kidney, or from the bladder, in consequence of malignant fungous growths, to which those parts are liable: a disease which, though more surely fatal than the stone, is scarcely, to the unhappy subject of it, so appalling.

Hæmorrhage may take place from the surface of the bladder from chronic disease, not cancerous, of that membrane. Mr. Howship has recorded an instance of this kind which occurred in Mr. Heaviside's practice. An old East Indian, who had

long been subject to nephritic complaints, was suddenly seized with what was thought to be retention of urine. A catheter was passed, but as no water flowed it was supposed that it had not entered the bladder, in the situation of which there was a manifest tumor. The patient died the next day; and the bladder was found distended by a very large coagulum of blood which had come from the diseased mucous membrane. There was no trace of hæmorrhage in the kidneys, nor in the ureters.

Now we judge of the exact seat of the hæmorrhage, and of its cause, partly by the nature and appearance of the effused blood, and partly by the symptoms that precede or accompany the bleeding.

Dr. Prout states that "when blood is derived from the *kidney*, it is in general equally diffused throughout the whole urine: on the contrary, when derived from the bladder, the blood for the most part comes away in greater or less quantity at the termination of the discharge, the urine having previously flowed off nearly pure."

There are also certain modifications of the sensible qualities of the excreted blood, by means of which the same distinguished physician thinks he can pronounce, with considerable confidence, that the hæmorrhage is owing to malignant disease. "The red particles of the blood (he says) discharged in the earlier stages of fungoid disease have often a remarkable appearance, and appear to the eye larger than natural; so that after they have subsided to the bottom of the urine, they at first sight somewhat resemble grains of lithic acid gravel, and, like that substance, when the vessel is inclined, may be distinctly seen to roll along the bottom. From this peculiar appearance of the red particles of the blood, the presence of malignant disease may often be suspected before the symptoms assume a decided character." In a more advanced stage of the disease, there is often a dark-coloured offensive bloody sanies in the urine, and more or less of mechanical impediment in passing it. I should conceive that the microscope might aid the diagnosis of such cases.

There is one phenomenon, which whenever it occurs, is very characteristic of hæmorrhage from the kidney, or from the commencement of the ureter. I mean the expulsion, with the urine, of slender cylindrical pieces of fibrine, which have evidently been moulded in the ureter, and subsequently washed

down into the bladder by the descending urine. These little coagula are commonly of a whitish colour, the red particles of the blood having been removed; and they look like slim maggots, or small worms. They denote, with much certainty, that the hæmorrhage which they accompany is renal.

Such, then, are some of the points of diagnosis furnished by the qualities of the excreted fluid itself.

The bleeding may be presumed to come from the kidney, or from the upper part of the ureter, when it is accompanied or preceded by a sensation of heat, or of weight, or by some degree of pain, in the situation of the kidney; especially if these uneasy feelings are confined to one side of the body. This presumption of course will be strengthened if calculi have been known to descend from the kidney; and converted into certainty if the patient suffers, together with the hæmaturia, a fit of the gravel; and if there be no symptom of stone, or disease in the bladder.

On the other hand, when no symptoms referable to the kidney or ureter are present, while there are signs of stone, or of disease of the bladder, or of a diseased prostate—a mixture of mucus with the blood; occasional retention, or a sudden stop in the stream, of urine; pains referred to the glans penis immediately after the bladder is emptied—then we conclude that the blood proceeds originally from that receptacle.

When pure blood comes away, either *guttatim*, or in a stream, unmixed with urine, and neither preceded nor accompanied by any desire to make water, it is probable that the *urethra* is the locus of the hæmorrhage.

Bleeding from the surface of the urethra doubtless may, and commonly does proceed from some mechanical injury done to that channel: as in the passage outwards of a fragment of stone, or inwards of a surgical instrument. But it is probable that blood is sometimes exhaled from the same membrane in considerable quantity, under circumstances which favour or produce a strong determination of blood to the genital organs. A young man came to the Middlesex hospital with hæmorrhage from the urethra, and said that he had lost a considerable quantity of blood in this way, within a few hours. The hæmorrhage appeared to have been the consequence of excessive indulgence in sexual intercourse. His own account of the matter was that he had passed the night with a female, in whom

the monthly period had just returned; and he ignorantly fancied that the hæmorrhage from his own person was the result of a sort of contagion. However, the bleeding was permanently arrested by the introduction of a bougie, which was allowed to remain for a short time in the urethra. This was the solitary instance to which I alluded just now, of (perhaps) idiopathic hæmorrhage, occurring within my own knowledge. When the hæmorrhage comes originally from the urethra, the blood may regurgitate into the bladder, and coagulate there; and mislead an observer into the belief that the hæmorrhage was vesical.

It appears then, that, in many instances, certain local symptoms are associated with hæmaturia, and point distinctly to the part of the urinary apparatus whence the blood proceeds.

But many cases are very obscure. Blood sometimes appears, mixed in greater or less quantity with the urine, when there is no pain, nor any other sign which would lead us to fix upon one part rather than another as the source of the hæmorrhage. Now I believe that hæmaturia, bearing this indeterminate character, will generally turn out to be *renal*, and to depend upon earthy concretions in the kidney. It is true that the hæmorrhage which results from cancerous disorganization, whether of the kidneys or of the bladder, may also be painless. But cancerous disease of these organs (unless it extends from parts in the neighbourhood, as from the rectum, or from the uterus, to the bladder) is very rare; and when it does occur, the nature of the case may usually be ascertained from those peculiar qualities of the effused blood which I have mentioned as being characteristic of malignant growths.

A calculus can seldom remain long in the *bladder*, at any rate will seldom cause bloody urine, without giving some other notice of its presence there: but concretions form in the kidney, sometimes in great numbers, and reach a considerable size, and remain there long, without furnishing any signal from which we might suspect their existence; except (perhaps) the occurrence of hæmaturia. We know this, because calculi are frequently met with in the kidneys of persons who have never suffered any pain or obvious derangement of the urinary organs during life; and because, in other persons, in whom such calculi pass down from the kidney towards the bladder, the first notice of their existence is often given by the acute

suffering they inflict during their transit through the narrow ureter.

You will perceive, from what I have said, that the *treatment* of hæmaturia resolves itself, in most cases, into the treatment of the disorder or bodily condition with which the hæmorrhage is associated, and of which it is merely a symptom.

Sometimes, however, the bleeding itself is so profuse, or so long continued, as to require direct efforts on our part towards its restraint.

“When (says Dr. Prout) the bladder becomes distended with blood, and complete retention of urine in consequence takes place, recourse must be had to a large-eyed catheter, and an exhausting syringe, by the aid of which, and the occasional injection of cold water, the coagula may be broken down and removed. If the hæmorrhage be so profuse that the bladder becomes again distended with blood in a very short time, the injection of cold water into the rectum or bladder is sometimes of great use; and should these means fail, from twenty to forty grains of alum may be dissolved in each pint of water injected into the bladder; a remedy that seldom fails to check the bleeding, even when the cause is malignant disease. I have never known any unpleasant consequences follow the use of this expedient, and have seen it immediately arrest the most formidable hæmorrhage, when all other means had failed; and when the bladder had repeatedly become distended with blood, almost immediately after its removal.”

Among remedies given by the mouth, the same physician thinks highly of the acetate of lead. I have mentioned before, in these lectures, a nostrum called, after the name of its inventor, *Ruspini's styptic*. This has often been known to put a stop to hæmorrhage which had resisted other remedies. I will read you one example of this from Sir Benjamin Brodie's published lectures. Speaking of hæmaturia, dependent upon disease of the prostate gland, he says:—“Those medicines which operate as styptics when taken internally, and which are useful in cases of hæmorrhage from the lungs, are also useful in hæmorrhage from the prostate. I had a patient with very diseased prostate. A frightful hæmorrhage took place. The usual methods of treatment were adopted, but were of no avail. The skin became pale, the pulse became weak, and the patient was exhausted; yet the bleeding continued.

Large quantities of blood were drawn off with the catheter: nevertheless the bladder continued to become more and more distended with blood, and was felt prominent in the belly as high as the navel. All other remedies having failed, I gave the patient a dose of the nostrum known by the name of Ruspini's styptic, and repeated the dose two or three times in the course of the next twelve hours. In about half an hour after the first dose was taken the hæmorrhage ceased; and it never returned. The patient lived a year and a half afterwards, and there was no reason to believe that any ultimate harm arose from the bleeding."

For a long while this nostrum seems to have baffled analysis. The late Dr. Maton told me that Dr. Wollaston had examined it, and had arrived at the negative conclusion, that it contained no metallic substance. Dr. A. T. Thomson has since announced that it mainly consists of a solution of *gallic acid* in alcohol diluted with rose water.

There is no substance more highly spoken of as a remedy for internal hæmorrhages by foreigners, and especially by the French, than the extract of *Rhatany* root, the *Krameria* of our Pharmacopœia. A female was sent to me by my colleague, Mr. Arnott, complaining that for some weeks she had been passing bloody urine. She had gone through the ordinary routine of treatment without benefit. There were no symptoms present which threw any light on the precise source or cause of the hæmorrhage. I recommended a trial of the rhatany, and she began to take a scruple of the extract, mixed with water, three times a day. As in Sir Benjamin Brodie's case, the hæmaturia ceased after the first dose, and it did not return for many months. I mention this instance the rather, because the *gallic acid* enters into the composition of this vegetable extract also.

Now the gallic acid is one of those substances which, when introduced through the digestive organs into the blood, passes through the round of the circulation unchanged, and reappears in the urine. We may conceive, therefore, that it stays internal hæmorrhage by exerting its astringent property upon the ultimate capillary blood-vessels in its passage through them. It certainly is applied, in solution, after its elimination from the blood, to the urinary passages; and thus, in hæmaturia, it may be presumed to produce its styptic effect upon the bleeding surface.

To the same principle are owing, I believe, the astringent and styptic virtues of the uva ursi, bistort, tormentil, the pomegranate, kino, catechu, and the several preparations of gall-nuts. I am sorry that I have not had an opportunity of trying the gallic acid itself, in its separate state; for I have heard of several instances of its successful employment in cases of internal hæmorrhage. If, as I believe, it really has this power, it is very desirable that it should be prescribed in a more definite and precise manner than is afforded by its natural combinations with so many different vegetable matters.

Medical Gazette, July 8, 1842, p. 547.

14.—ON THE NATURE AND TREATMENT OF DROPSY.

By JAMES O'BEIRNE, M.D., Vice-President of the Royal College of Surgeons in Ireland, Surgeon Extraordinary to the Queen, &c. &c.

[One of the most interesting papers published in the journals within the past half-year, is this by Dr. O'Beirne. We are only sorry that our space will not allow us to give it without abridgment, but we have endeavoured to condense it with as little injury to its merits as possible. Dr. O'Beirne proceeds at once to his point without any unnecessary preface.]

From what system of vessels is the fluid effused in dropsy derived? It is generally considered to be effused from exceedingly fine vessels, called exhalants, which have their origin in the capillary system, and terminate on the surface of membranes and the cellular laminæ of the skin, or in the tissues of organs. But such is their extreme tenuity, that it is impossible, by the ordinary means, to ascertain whether they belong to the arterial or the venous system. On this point, however, there are other means of approximating to the truth. Thus, arteries are not very extensible; when tied, they rarely pour out any of their contents, but relieve themselves by the enlargement and anastomosis of their small lateral branches; and when not tied, but much distended, their minute branches pour out either blood or coagulable lymph, not serum: veins, on the contrary, are very distensible, and when tied, compressed, or obstructed in any way, they rarely relieve themselves by their small lateral branches, but by extension of their coats, and if

that prove insufficient, by the effusion of serum, not of blood. No points in physiology or pathology are more completely determined than these, and the contrast which they exhibit is strikingly favourable to the conclusion, that the exhalants are intimately connected with the venous, and not with the arterial system. This being the case, it is natural to infer, that a system so connected with the source of the fluid effused in dropsy, must perform an important part in producing the phenomena of the disease. Accordingly, I shall put the truth of this inference to the most rigid scrutiny, by taking the venous system as the basis of all my inquiries on the subject.

[If it be true then, that obstruction to venous circulation is the main cause of the effusion of serum, which occurs in dropsy, it should follow, that the causes of the disease are of a nature to produce such obstruction: and such, Dr. O'Beirne proceeds to show, is the case; but as the varieties of dropsy are so numerous, he selects *hydrothorax* as an example on which he may make his observations. The causes of hydrothorax being chiefly diseases of the lungs, heart, liver, spleen, ascites in advanced stages, venous plethora, cold, and malformation of the thorax; he considers each of these separately, and shows that they all occasion *venous obstruction*.]

When any portion of one or of both lungs becomes either hepatized, or occupied by tubercles, hydatids, or abscesses, that portion is no longer permeable, and consequently the capacity of these organs to admit circulation through them, is, *pro tanto*, diminished; while the quantity of venous blood to be circulated remains undiminished. Such being the unequal relation which they bear to each other, it is clear that the venous blood cannot pass through the lungs, without meeting with obstruction, proportional to the extent of impermeability so produced. Again, when, as in pleuritis, a quantity of serum is effused into the cavity of the pleura, the effused fluid compresses the lung, diminishes its capacity, and obstructs its circulation.

When the parietes of the left ventricle of the heart become either atrophied or hypertrophied, or when the valves of this ventricle, or those of the aorta, are diseased, the action of the heart, although often apparently strong, is really weak, and, of course, unequal to propelling the blood as quickly as it is received. The natural consequence is, that the pulmonary veins

soon become congested, and cause obstruction to the whole of the lesser circulation. It is not unlikely, also, that the congestion of so much arterial blood may excite inflammation and hepatization of the lung, and of course, still further diminish the capacity of that organ.

When either the liver or the spleen is so enlarged as to press the diaphragm upwards into the thorax, and compress the corresponding lung, the circulation through that lung is obstructed. The same effect, but in a greater degree, is produced by the pressure which a large collection of serous fluid in the cavity of the peritoneum exerts upon both lungs.

In old or elderly persons, it is computed that the venous system contains nearly two-thirds of all the blood in the body, whilst there is no increase in the capacity of the lungs, through which that great quantity is to be circulated in a given time. It is evident that such a disproportion cannot long exist without causing obstruction of the pulmonary circulation.

It appears, then, that all the causes of the disease are divisible into two classes—those which act by diminishing the capacity of the lungs—and those which act by increasing the quantity of blood sent to the lungs; and that all of them are of a nature to produce the obstruction in question. But it sometimes happens, and not unfrequently, that several of these causes co-exist in the same person, and combine to produce a proportionably higher degree of the same effect.

When the two great trunks of the venous system, the *venæ cavæ*, are over-distended, what are the effects produced by that distension upon the different organs and parts of the body from which these trunks receive blood? In order to give a satisfactory answer to this question, it is necessary previously to direct attention to certain circumstances connected with the effusion of serous fluid, and which so uniformly attend it as to constitute so many laws regulating its occurrence. The following are the circumstances to which I allude:—

First. In dropsy, the serous fluid is almost always effused into either the minute cells of the cellular membrane, or into large or small serous cavities, or into both. In rare cases, as in dropsy of the uterus, and stomach and bowels, it is effused from mucous membrane. But it is never effused into tissues of denser or more complicated structure, such as those of the soles of the feet, the plantar aspect of the toes, the palms of the

hands, the palmar aspect of the fingers, the ears, the hairy scalp, the liver, and perhaps other internal organs. The direct inference from these facts is, that as a general rule or law, great tenuity and simplicity of structure, and, of course, equal simplicity of function, are essential to the occurrence of serous suffusion, and, consequently, that this process is one of exhalation, not of secretion.

Secondly. When a vein is obstructed, effusion of serum takes place, not at the point of obstruction, but at an infinity of points the most distant, or nearly so, from that point; that is to say, it takes place from the numberless exhalants connected with the minute radicles or origins of the obstructed vein. Thus, for example, the pressure of the gravid uterus upon the great veins of the abdomen, causes effusion of serum into the cellular tissues of the toes, feet, and ancles, not into the cavity of the abdomen. This law is so general as to have no exception.

[The author next proceeds to show the effects which obstruction produces upon the main branches of the vena cava superior, and venæ innominatæ—and then the effects of obstruction upon the vena cava inferior and its branches.]

When the column of blood in the vena cava inferior is not only not received, but actually repelled by the right auricle of the heart; the first effect is to throw that column back upon, and raise up the valves nearest in a direct line, which are those situated at the upper extremity of each femoral vein, so that the blood cannot descend further than the external iliac veins. Neither can it find a passage downwards through the internal iliac veins, further than their small branches, all of which are supplied with valves. In this manner, the femoral, and the other veins of the lower extremities, become obstructed and distended; and the consequence is œdema of the ankles, and the feet, with the exception of their soles. Hence it is, that effusion of serum into these parts is so early and constant an attendant upon the disease. By degrees, the legs, and afterwards the thighs, become similarly affected, until the lower extremities are completely infiltrated, and present a swollen, very misshapen, and deadly pale appearance. Long before, however, the effusion has reached to this height, other parts gradually become implicated; for the right and left pudic veins are equally obstructed and distended, and the consequences of this state are, watery swelling and paleness, and disappearance of the rugæ of

the scrotum, and also similar swelling and paleness, with elongation and spiral twisting of the prepuce.

[He next proceeds to the effect of obstruction upon the other branches of this large vessel, but first enters on the subject of the forces by which the blood of the great vein itself is moved upwards. It is the largest and nearly the longest vein of the body, and yet possesses no valves, and is not in contact with its corresponding artery like most other veins. It seems to be assisted in its functions by several forces, by the pulsations of the right common iliac artery, which passes over it just where the junction of the two iliac veins constitutes this great vessel; it is further assisted by the impulses of the right renal and several other arteries.

When the circulation through the lungs is so impeded that the right auricle of the heart can no longer admit venous blood as usual; when, on the contrary, that auricle at each systole repels it upwards and downwards, and when the valves of the femoral veins prevent its further descent, it is quite evident that the vena cava inferior must be relieved in some way; and it seems that the most likely, indeed the only way of relief will be by the *venæ cavæ hepaticæ*.]

These veins, three or four in number, enter the vena cava inferior, just as it is passing through the tendinous opening in the diaphragm; their mouths are large and always found wide open; they admit of reflux, for they have no valves, and water or size injected through them, passes freely into the vena portæ, and *vice versâ*; they are indirectly connected with a large cellular and highly elastic organ, and one eminently capable of acting as a great reservoir; lastly, the powers which propel the blood of the portal system are very feeble compared with those which propel that in the inferior cava. In every respect, therefore, these vessels and the rest of the portal system, instead of offering resistance, seem to be constructed with the design of not only facilitating, but providing for, determination towards them. Taking, then, all these facts and arguments into due consideration, the conclusion seems inevitable, that the vena cava inferior, assisted by the right auricle, is made to act somewhat like a forcing pump, and relieves its over-distended state by driving its blood through the open mouths of the *venæ cavæ hepaticæ*, on to the vena portæ, thence to the splenic vein, and, finally, into the cells

of the spleen, preceded, of course, by that previously contained in the hepatic veins.* According to this view, the hepatic veins act as so many diverticula, or by-paths, while the spleen supplies a large reservoir for the relief and safeguard of the inferior cava; yet, that a vein so essential to life, and so peculiarly and dangerously circumstanced required some such provision against rupture, is a point that must be admitted; for, without such a provision, its external coat, although remarkably stronger and more elastic than that of any other vein, would offer but feeble resistance to the force with which it would then have to contend, and rupture would be the frequent consequence.

[There are, however, some arguments respecting the spleen, which might be advanced to show that Dr. O'Beirne's inference is incorrect. These, however, he answers. In all the cases of extirpation of the spleen when the patients survived, they were previously in perfect health, and therefore this organ would be, in Dr. O'Beirne's opinion, in a state of contraction and rest; there being no obstruction to the passage of blood from the inferior cava to the heart, no necessity for its transfer to the spleen, and consequently, no indication of the want of such a reservoir. From the experiments of M. Assollant, who extirpated the spleen in forty dogs of both sexes, it would really appear that the spleen can be dispensed with when the animal is in a healthy state, and that its uses are chiefly manifested in states of disease. Out of these forty cases, one-half survived, and were attentively watched: "in not one of the survivors was there the least disturbance of digestion, absorption, circulation, respiration, voice, secretion, nutrition, locomotion, sensation, the senses, instinctive faculties, or reproduction." It is very unfortunate however that, in all these experiments, there is no mention made whether the spleen was in a state of contraction or dilatation at the time of extirpation. If in those animals who survived it had been found that the spleen was contracted, the proof of the comparative inutility of the organ in the state of health would have been of a more positive kind.]

* [A very interesting paper is published in the *Dublin Medical Press*, for Aug. 10, 1842, in which Professor Hargrave agrees with Dr. O'Beirne respecting the reflux in question, but differs as to the means or forces by which it is effected. He thinks that in cases of impediment to the cardiac and pulmonary circulation, "the blood is capable of being regurgitated into the large hepatic veins," and from these into the vena portæ and spleen. We shall find room, if possible, for this interesting paper of Professor Hargrave's towards the end of this volume.]

From all the facts and arguments which can be adduced, Dr. O'Beirne arrives at the conclusion that, "in the healthy state the spleen is contracted and at rest: that it contains no more blood than is poured into its cells, after becoming venous, by its nutritious arteries: and that it performs no function but that of a reservoir for the relief of overloaded states of the vena cava inferior, and the whole portal system."

In cases of obstruction to the ascent of the blood along the inferior cava, what effects might we expect to find produced on its main branches, and ultimately upon the organs from which those branches proceed?]

The organs in question are the kidneys, the uterus, and the urinary bladder. As has been already observed, both renal veins enter the inferior vena cava at a very obtuse angle, and as much as possible in the direction of the natural current of blood in the latter. But as it is there not only impeded, but repelled, it is manifest that the renal veins, so far from being enabled to empty themselves as usual, must even be subjected, more or less, to the pressure of the column of blood in the cava. When these veins are so circumstanced the circulation through the kidneys must be greatly disturbed, and, as a natural consequence, the functions of these organs are imperfectly performed. The over-distended state of these veins is, then, only relieved by the effusion of small quantities of their serous contents into the pelves of these organs; while the blood of their minute arteries, having ceased to be admitted by their corresponding venous radicles, must, at least in small quantities, be poured into the same cavities. Hence, the urine becomes scanty, high coloured, and albuminous. But, as the disease proceeds, even this kind of relief ceases, and with it, the function of secretion, and there is then total suppression of urine. This explanation of a symptom so constantly attendant upon dropsy, is strongly supported by practical facts. In the first place, I have frequently found, that in cases where there was almost a total suppression of urine, the abstraction of even a moderate quantity of blood from the arm caused the kidneys to actively resume their functions in a few hours, and without the aid of any diuretic. Again, it is well known that the same diuretics which have failed to act before, often act energetically after venesection. But, to come from the functions to the structure of these organs, it is obvious that their circulation and functions cannot be thus suspended for any

great length of time, without corresponding disorganization of their substance ; so that, after all, diseased states of the kidneys may be the consequence, not the cause of dropsy.

From the same cause, the veins of the urinary bladder, which are very numerous, also become so overloaded as to be forced to effuse some portion of their serous contents into the cavity of that viscus.

[After this sketch of the state of the general venous system in dropsy, the author proceeds to take a similar view of the vena portæ and its branches.]

When the over-distended state of the inferior cava is relieved, as has been shown, by repeated refluxes through the venæ cavæ hepaticæ, it is obvious that the circulation through the liver is reversed in its direction ; and that the blood which circulates through this organ is chiefly that of the inferior cava, not that of the vena portæ, which is best adapted to the secretion of bile, and which, from containing the nutritious substances absorbed from the stomach and intestines, must be essentially different from the blood of other veins. Is it not from these combined causes that even in dropsies unaccompanied by any organic disease of the liver, the stools are generally clay-coloured ? When all the branches of the vena portæ become much overloaded by the repetition of the refluxes in question, it is also obvious that these vessels will effuse their serous contents into the cavity of the peritoneum, and cause ascites ; or, as more rarely occurs, into the cavity of the stomach and intestines. The reason why the latter of these terminations is so rare, is evidently the greater facility for effusion presented by the delicate and simple structure of the peritoneum, as compared with either the stomach or intestines. But all these consequences may arise from causes unconnected with the general venous system, and solely depending upon disease of the different organs which return their blood to the vena portæ. Thus, if tubercles, masses of adipocire, hydatids, abscesses, or collections of blood, form in the liver, all the branches into which the vena portæ divides in the substance of that organ, become compressed and their circulation impeded ; if, on the contrary, the size of the liver become diminished, and its substance condensed, as in cirrhosis of that viscus, the same results necessarily ensue ; if the pancreas becomes enlarged by disease, the splenic vein is unavoidably

subjected to compression, and the consequence is, venous congestion of the stomach, omentum, and spleen; or the enlargement of the viscus may be such as to extend to, and cause, pressure of the vena portæ itself. As to the spleen, it has already been fully considered. It is scarcely necessary to say that such states are, *per se*, sufficient to cause either ascites or effusion of serous fluid into the stomach and intestinal canal.

The plan of enquiry just followed has enabled me to bring into view, and to explain dropsy as it occurs in various cavities, large and small; but it remains to consider that which is chiefly seated in the cellular tissue, and which is either not attended, or attended but in a slight degree, with effusion into the lungs or other organs. I mean that common form of the disease, called Anasarca. The general cause of this affection is cold, or cold combined with moisture. The effect of this agent is, as has been already stated, to suddenly repel a quantity of venous blood from the whole surface of the body towards the deep-seated veins. The valves which all the small veins possess prevent this blood from returning to the surface, while current after current urges it onward to the heart and lungs. But such a quantity is so disproportioned to the capacity of the latter organs, that it cannot be circulated through them without causing great distension of their vessels, and also, perhaps, more or less effusion of serum into their substance. Hence it is that one of the very first symptoms of the disease is a sense of oppression, tightness, and uneasiness about the chest. But if the cold be not too intense, or applied for too long a time, this sense of oppression is soon relieved, often, as we see, in a few hours, by the occurrence of such a general effusion of serum into the subcutaneous cellular tissue, that the quantity effused is collectively so great, as to proportionally lessen the circulating mass of blood, and by doing so, to check the further progress of the disease, and enable the absorbents to remove such serous fluid as may happen to be effused into the substance of the lungs.

[After reviewing all that Dr. O'Beirne states, we see that the whole of his opinions rest upon the supposition that all the phenomena of dropsy are perfectly explainable upon the simple principle of *venous obstruction*, without necessarily being produced by inflammatory action. He says:]

It appears, then, that the general results of my inquiries on the subject of dropsy, are

First, that all the phenomena of the disease are but the products of venous obstruction; and that venous obstruction is caused either by diminished capacity of the lungs, or by an increase of the circulating mass of venous blood, or by both of these causes combined.

Secondly, that the disease is not of an inflammatory nature.

Thirdly, that the disease, with the exception of the early part of its course, is attended with more or less of general debility.

With these general results before me, let me now see what curative indications respecting hydrothorax and anasarca, can be deduced from them. The first of these results manifestly shows, that we have only to remove the venous obstruction, in order to remove the disease; and, that this must be done either by increasing the capacity of the lungs, or by diminishing the circulating mass of venous blood.

With respect to the first of these alternatives, the capacity of the lungs is, in dropsy, either natural or diminished. When natural, as in cases arising solely from either cold or plethora, it would be absurd even to imagine that it could be increased by any means; and when diminished, as in cases arising from hepatization and a variety of other causes, it cannot be increased without removing those causes, and consequently, without losing time which cannot be spared. It appears, therefore, that we must fall back upon and adopt the other alternative, that of diminishing the circulating mass of venous blood. This being, then, the main curative indication, how is it to be carried into effect? Seeing that our object should be to relieve the obstructed state of the venous system as fully and quickly as possible, it is clear that we should employ venesection in preference to cupping, which acts less energetically and more slowly. But what quantity of blood should be taken? The second of the general results shows, that we have not to contend with an inflammatory disease, and consequently that the quantity should not be large, while the third of these results warns us against taking more than a moderate, or rather a small quantity, perhaps from eight to ten ounces. Should we repeat the bleeding? One of the immediate effects of the first bleeding should be that of relieving the absorbent system, and enabling it to restore the effused serum to the circulating mass of blood; and we see a proof of this being actually the case in the evident

reduction which venesection causes, even in a few hours, in the swelling and œdema of the external parts. It may be safely inferred, therefore, that a short time is sufficient to restore to the venous system as much serum as compensates for, if it does not exceed, the quantity of blood which had previously been taken from the arm. We see the proof of this, also, in a fact, which I have often observed, that although the patient may, at first, bear the bleeding badly, he evidently rallies in a few hours. If necessary, therefore, we need not feel any dread of repeating the bleeding. How often, at what intervals, and in what quantity should it be repeated? It should be repeated when absorption and the secretion of urine become languid, but it will rarely be required to do so more than three or four times during the treatment: the intervals between each should be from two to three or four days, so as not to induce debility; and, for the same reason, the quantity of blood taken should be reduced in succession from eight or ten to six, and from six to four ounces, the last being the smallest that can be of any decided service. If the patient be young, but of weakly constitution, or if he be old and feeble, and supposing, at the same time, that the disease has arrived at a considerable height, how are we to proceed? We should bleed him from a small orifice, and as much as possible in the recumbent posture; while the blood is flowing, we should give him gin and water in such quantities as may be necessary to support him; and, after the arm has been tied up, he should be ordered to have frequently during the day strong broths and such other kinds of animal food as may be found to agree with him. This mode of treatment will, no doubt, appear very strange, yet it is founded upon the soundest principles, and I have employed it, as will be seen, with the most decided success. The proportions in which I have been in the habit of directing gin and water to be used, are one part of the former to four or five parts of the latter, and the gin should be Dutch, not English. It is scarcely necessary to say, that I have selected this kind of spirituous liquor on account of its well-known diuretic properties. If a case be so far advanced that the cavity of the pleura is filled, or nearly so, with serous fluid, and if the patient be evidently dying from difficulty of breathing, yet not comatose or paralysed, are there any means of immediately relieving the difficulty of breathing, so as to enable us to give him a chance for his life? I cannot answer

this question from experience, but it appears to me to be a case, particularly if the patient be young and has been previously healthy, in which we would be justified in instantly having recourse to paracentesis, which may be performed by a common lancet, if we should, at the time, not happen to have a better instrument. While the fluid is issuing from the chest, the patient should be given warm wine and water, and every restorative means should be employed; and, when a quantity sufficient to relieve his breathing has been drawn off, the wound should then be carefully closed with adhesive straps. This being done, and the restorative plan being continued, it is probable that absorption will go on, and enable us, in a few hours, to find a vein from which we should take blood in a quantity proportioned to the patient's strength, from a small orifice, and in the recumbent posture. Having thus reduced the case to the state of an ordinary one, we may then treat it as such, until, perhaps, success shall have at length crowned our efforts to snatch a victim from the very mouth of the grave.

The next curative indication is obviously to support the patient by animal food, and the occasional use of gin and water, in order to enable him to bear not only these repeated bleedings, but also the debilitating effects of the disease. The only exception to this rule is, perhaps, the case of a young, strong person, in whom an attack of inflammation of the lungs has just terminated in serous effusion. In such a case, it will be advisable to withhold both animal food and spirituous drinks for two or three days, but beyond this time, if not before, the state of the patient will not, even in this case, fail to evince the necessity of giving both.

The other curative indications are, first, to free the bowels, if confined, with compound powder of jalap, or, if their secretions and discharges be unhealthy, with calomel or blue pill; secondly, to assist the action of the kidneys by diuretics; thirdly, if the disease has arisen from hepatization of the lung or lungs, to administer blue pill in combination with diuretic powders, as this combination often acts upon the mouth as well as the kidneys, and, by doing so, causes absorption of the coagulable lymph deposited in the cellular tissue of the lungs; fourthly, should more or less of hepatization remain after the dropsy has been removed, to employ a mild mercurial course till all dulness has disappeared, and the natural respiration is again heard all

over the chest; fifthly, when the disease has been completely removed, to advise generous diets, tonics, and change of air.

Such is the treatment which I recommend in hydrothorax, and also with a few obvious modifications in anasarca.

[Six cases are related as examples; and the mode of treatment here recommended is shown to be attended with very excellent results. In the first case,]

The patient's difficulty of breathing was such that he appeared to be at his last gasp; so much so indeed, that my first step was to order all the doors and windows of the ward to be opened, and spirit of ammonia to be held under his nose. His face, neck, wrists, and backs of his hands, and lower extremities were œdematous and greatly swollen. His lips were of a dark purple colour, and the action of the heart was rapid and irregular, and the pulse quick, soft, compressible, and intermitting. On succussion, the sound of fluid dashing within the chest was heard distinctly on the left side, but not on the right. The heart was displaced, and felt pulsating at the right side of the sternum.

[This patient was bled to twelve ounces, from which he experienced great relief; and next day he was bled cautiously again, to the amount of nine or ten ounces, at the same time taking strong broths, and occasionally a wine-glass full of gin and water, one part of gin to four of water. He recovered rapidly, and in twelve days was convalescent. The second case was still more remarkable. The patient had an attack of scarlatina, followed by such dangerous symptoms, that two of the most eminent practitioners gave the case up as hopeless. When Dr. O'Beirne first saw the patient,]

He was sitting up in bed, and doubled forwards, that being the only position, in which, as he said, he could breathe, or which he was able to assume for two days before. His face, neck, trunk, lower extremities, and hands, were greatly swollen and œdematous. His lips were of a dark purple colour, and the wings of his nose were in rapid motion. His pulse was full, soft, compressible, and intermitting, and the action of the heart tumultuous and irregular. His breathing could scarcely be more difficult than it was, and, on succussion, the sound of a large quantity of fluid splashing within both cavities of the chest was distinctly audible, not only to me, but to several per-

sons standing round his bed. The abdomen was much distended, and evidently contained a large quantity of fluid. On inquiry, also, I found that he had passed no urine on that day, and not more than two ounces of a high colour during the two previous days; in fact, there was total suppression of urine.

Such being the case which I was called upon to treat, I could not conceal from myself that it was a very formidable one, yet the youth and previous strength of the patient, and the circumstance of bleeding not having been employed, induced me to entertain some hopes of success. Accordingly, my first step was to request a consultation with Professor —. That gentleman, however, refused to attend, on the plea of other business, requested that I might do what I pleased, and, on being informed that the only question asked by me referred to bleeding, he said that the boy might die in the very act of being bled. Being now left alone and unassisted, I sent for the family apothecary, the late Mr. Justin Kearney, than whom few men were more generally respected and esteemed, and informed the family, in his presence, that I entertained some hopes of recovering the boy by bleeding, but that I could not hold myself responsible for the consequences which might attend such a mode of treatment. The answer was, that the only remaining chance for life should be given. Without further loss of time, therefore, I proceeded to take blood from his arm, and finding that he did not become weak, allowed it to flow until ten ounces were taken. When about half of this quantity had been drawn, he exclaimed, "Doctor, you have saved my life," and when his arm was tied up, he was able to lie down with comparatively great ease. The blood drawn was not either buffed or cupped. He was now ordered to have fifteen grains of compound powder of jalap every hour, until his bowels should be freely moved, and afterwards to be given a moderate sized cup of chicken broth. At this time it was about eleven o'clock in the forenoon. At eight o'clock in the evening, I saw him again, and found that his bowels had been freely moved, and that he had passed more than a pint of high-coloured, lateritious urine: his breathing was now greatly relieved, his pulse, though quick, was firmer, and no longer intermitted, the action of the heart was much less violent and more regular, and the swelling and œdema were every where greatly reduced. Finding that he did not complain of weakness, and that his pulse was so firm, I bled him

again to six ounces, and ordered the compound powder of jalap to be continued. During the night he slept occasionally for about half an hour at a time, had some watery discharges from his bowels, and passed more urine and of a clearer colour. On the following morning I found him still more improved in every respect, and the blood last drawn free from buffing or cupping. As his strength, and the firmness of his pulse, seemed rather increased than diminished, I bled him again to six ounces, and directed the same powder to be taken. In a few hours after he had several watery evacuations from his bowels, which seemed to distress him very much; and, for the first time, he complained of weakness, and asked for animal food, which he was allowed to have, and also some weak gin and water occasionally. The use of the compound powder of jalap was now discontinued, and he was directed to be kept as quiet as possible. He slept soundly throughout nearly the whole of that night, and frequently passed considerable quantities of clear urine, and on the next day he was so well that I had merely to order his animal food and the gin and water to be continued. From this period all the symptoms began rapidly to retire, and on the tenth day from my first visit he was in perfect health, and enabled to go out and pursue his studies. The patient is now a solicitor practising in the town of Monaghan, and his mother and family are now resident in Dublin, and can vouch for the facts which I have stated. The case made some noise at the time, and may still be recollected by some of the older practitioners of this city.

[The other cases related are of much the same character, and the success of the treatment equally remarkable. This interesting paper is concluded by some observations on the views of venesection entertained by almost all writers on this subject. Bleeding has indeed been adopted in the treatment of dropsy in all ages, from Hippocrates to the present period, but so conditionally as frequently to destroy its efficacy,]

In fact, it was, and now is, so very conditional, that many have been deterred from having recourse to it in any case. Again, even the modern works on the subject exhibit the clearest admissions of the great difficulty to be encountered in steering a safe course between, on the one hand, the obvious necessity for counteracting the tendency to debility, and, on the other, the

danger of exasperating a diathesis supposed to be inflammatory. But, now that the practitioner has before him views which avoid the extreme of both doctrines; now that he is supplied with a set of clear and simple rules to direct him in bleeding; now that he sees and must be convinced that he can not only support, but stimulate the patient with the greatest advantage, and without any risk; it is to be hoped that he will, sooner or later, surrender his prejudices against the use of the lancet, and adopt a practice which will not, I venture to assert, fail to answer all his reasonable expectations.

Dublin Journal of Medical Science, Nov. 1842, p. 219—267.

15.—ON THE USES OF SOME OF THE COMBINATIONS OF IODINE.

By GERALD OSBREY, A.M., M.B., Physician to St. Mary's Dispensary.

[In Article 82, of our 2nd Number, will be found an interesting communication respecting the *Liquor Hydriodatis Arsenici et Hydrargyri*, prepared by Mr. Donovan; and we are happy to be able to confirm the accounts there given of its efficacy by the additional experience of other members of the profession. Psoriasis and lepra, are probably as difficult to cure as any cutaneous affection, and any remedy which is praised by respectable practitioners, ought to be tried in every case where other treatment has failed. The *ioduret of sulphur*, though more particularly useful in porrigo, has been found exceedingly useful in many of these cases of psoriasis and lepra. It is used in the proportion of twenty grains to an ounce of axunge, which is to be applied daily. The strength may be gradually increased to forty grains to the ounce. Dr. Davidson, of Glasgow, has written a very interesting paper on its effects, which will be found condensed in our 5th vol. Article 53. In the paper before us, by Mr. Osbrey, the effects of some of the combinations of iodine are interesting. He begins with the *liquor hydriodatis arsenici et hydrargyri*, in a case of inveterate psoriasis. The patient, Susan Atkins, æt. 9, was affected with diffuse psoriasis which engaged almost her whole body, the scales on the extremities being continuous and remarkably thick. The following mixture was given,

R̄ Aquæ distillat. $\bar{z}$ viij.; Liq. Hydriodat. Arsen. et Hydr. gtt. 80; Tinct. Zingiber. $\bar{z}$ ss.

Sumat unciam misturæ omni tertiâ horâ.

Sickness of the stomach was at first produced, which soon subsided on desisting from the medicine for a few days. In ten days the eruption began rapidly to decline upon the trunk, and the thick scales to loosen upon the extremities. The separation of the scales on the head was accelerated by applying an ointment consisting of equal parts of tar and dilute citrine ointments. "In five weeks from the commencement of the use of these remedies she improved in health, but after that period her appetite declined; she fell away in flesh, and her countenance became pallid. The use of the mixture was of course discontinued. All traces of the eruption had then disappeared from the surface of the trunk, and only a few patches remained on the extremities." She then went into the country, took tonic medicines and soon recovered her health. The mixture was again commenced, and in three weeks no trace of the disease remained.

The iodide of potassium, Fowler's solution of arsenic, mercurial alteratives, sarsaparilla, guaiacum, and other medicines had been previously tried in vain. At the same time we think that every practitioner ought to exercise the greatest caution in every case where he is using the above mixture, as in the case here related we perceive that the patient's health was at first materially injured for a time. Three other cases of scaly eruptions were treated in the same way. One was affected with several thick scaly patches on the extremities for twelve months previously. These disappeared when she had used the medicine about three weeks. The separation of the scales was here also assisted by the tar and citrine ointments. Twenty-five drops of the mixture were given three times a day without producing sickness.

The next case was one of very obstinate *lichen urticatus*, which had been mistaken for itch. It was a child of six years old, and took six drops three times a day. The next case was one of *scrofulous ophthalmia*, in which disease this medicine may probably be found a very useful addition to our usual treatment. In this affection we may probably also find advantage in the use of the *syrup of proto-iodide of iron*, in the

proportion of four grains of the proto-iodide to the ounce of syrup: of this about ten drops may be given three times a-day to a child four years old.

But the *iodide of potassium* seems to be one of the most popular combinations of iodine, especially in secondary syphilis, chronic rheumatism, mercurial cachexia, scrofulous ophthalmia, diseases of the skin, &c. A very interesting account of the effects of iodine, and of iodide of potassium, is extracted by Mr. Osbrey from Dr. Christison's excellent work on *Materia Medica*: but this medicine is now so much used and so well understood by most practitioners, that we need not here recapitulate its effects and uses, but will only refer the reader to Dr. Christison's, and also to Dr. Pereira's, account in their respective works. Mr. Osbrey concludes his interesting paper by relating a variety of cases in which he employed this medicine.

Chronic abscess and disease of the heart and joints.—In this case there was a chronic abscess of considerable size, a hand's breadth above the right knee, the joint was much swollen and there was a large indolent ulcer on the leg on the same side: her pulse was quick, and she was considerably emaciated. The following mixture was ordered,

℞ Decoct. Guaiaci. ℥ viij. Potass. Iodid. gr. xxiv.; Tinct. Cardam. co, ℥ ss.; Tinct. Hyosciam. ℥ i. M.

℥ i. ter in die sumend.

“An ointment consisting of equal parts of mercurial and iodine ointments was applied over the abscess. The ulcer on the leg was dressed with lint, moistened with black wash, and covered with oiled silk.” In three weeks the abscess had disappeared, and in two months her health was restored. Six weeks after this cure, the leg commenced ulcerating again, and the knee of the same side became slightly swollen. By means of the same treatment, however, she completely recovered, and has remained so since that time.

The next case was one of disease of the hip joint, in a child, æt. 6, in which the iodide of potassium proved highly serviceable. The symptoms present were much the same as we always find, and the following was the mixture ordered,

R̄ Decoct. Cinchon. $\frac{3}{4}$ vss.; Potas. Iodidi, 3 ss.; Tinct. Gent. co, $\frac{3}{4}$ ss.; Tinct. Hyosciam. 3 i. Misce.

3 ij. ter in die sumend.

A blister was also applied and kept open with savine ointment. The mixture was continued for about three weeks, when the child was much better, although the affected leg was ultimately shorter than the other, and true ankylosis took place.

Mr. Osbrey proceeds to make some remarks on the use of iodide of potassium in syphilis, but as this is a subject that has been already so well discussed, and is so generally known to the profession, we forbear lengthening this article by further allusion to it except in the words of Mr. Key, "This medicine (mercury and iodine) have both their respective benefits, and it may be said that iodine fulfils that in which mercury is deficient. In the normal forms of syphilis, the latter is rarely found to disappoint, and in the abnormal forms of primary sore, it rarely fails to do harm, while iodine exerts comparatively little influence on the normal chancre, chiefly confining its good services to the sores that are set astray by some peculiarity of the constitution."*

In rheumatism, likewise, this remedy has been found exceedingly useful, as well as in lumbago and gout; and Dr. Stokes recommends it as a diuretic for pleuritic effusions and dropsies, "he advises the same rule to be observed with regard to it as with respect to other diuretics, which is to wait *until all inflammatory symptoms have subsided*. Iodine appears from what he says to be chiefly of use at the precise point where mercury begins to fail, which is when the disease has changed from its acute to its chronic form."]

Dublin Journal of Medical Science, July, 1842, p. 406—433.

16.—ON THE USE OF OX GALL.

By CHARLES CLAY, M.D., Lecturer on Medical Jurisprudence, Manchester.

[Our readers will probably recollect our former allusion to this substance, as being strongly recommended in certain cases of jaundice and dyspepsia. Dr. Clay has pursued the investiga-

* Brit. and For. Med. Review, No. 24, p. 340.

tion of its use, and has published some interesting papers on the subject in the *Medical Times*. Before relating his cases he gives us something respecting its history.—It seems to be by no means a new remedy, for Boerhaave relates, “that he has cured pale ricketty children by pills made of the galls of the eel and the pike; that the medicine operated powerfully by urine; and that by its use the belly, being swelled, subsided surprisingly.”

Lewis, Cartheuser, Baglivi, and others, have likewise alluded to it, and found, among other qualities, that it had the property of preserving milk from coagulating, or turning sour, or when coagulated immediately dissolves it again.

Dr. Clay first tested its powers to relieve the pain in cancer, from noticing the fact that Dr. Peacock, of Darlington, observed that when the system was impregnated with bile in cancerous affections, the pain was always remarkably relieved. Whether this be really the case or not, we cannot state from our own experience, but only give the fact on the authority of Dr. Peacock, whom we know to be a very respectable physician. The following case will illustrate the treatment adopted by Dr. Clay.]

Anne H——ly, æt. 56, had a cancerous ulcer that had destroyed the greater portion of the nostrils, accompanied with the most lancinating pains, over which neither local applications nor internal medicines (except for a very brief space of time) had any control; the case had been long under treatment without improvement, and as a forlorn hope, I ordered the following:—

R̄ Fel. Bov. Inspiss., 3 ij. ; Ol. Carui., m. x. ; Magnes. Carbonatis q. s. ut fiat massa. M.

Div. in pilulas xxxvi., capiat ij. ter in die.

In order that the effect might not be combined with any other object, no local application beyond clean washing was recommended. After taking the pills for only one day great relief was experienced: on the fourth day no trace of pain remained; for three weeks the sore improved in appearance, without pain; slight pains again occurred. The dose was ordered to be repeated four times in the day. The pain again subsided, and all progressed well for two weeks longer, when the pains again occurred. Pills ordered, two repeated six times in twenty-four

hours, after which the pains slightly abated, but soon recurred again. Eight weeks after the commencement the sore began to assume its old character, and the pain became violent; she soon after left the dispensary, and I lost sight of the ultimate result. Before giving the gall in this case, the *motions were particularly white, and the bowels very much constipated, with acid risings from the stomach*, all of which vanished whilst under the influence of this medicine.

[If, as Dr. Clay observes, the inspissated gall is but a palliative in cases where schirrous or cancerous diseases have assumed a malignant form, yet it may prove a valuable acquisition to our means of giving relief in some very distressing cases. Dr. Clay relates the following cases to show the value of this remedy in *dyspepsia*.]

I was myself labouring under dyspepsia, almost every kind of food became acid soon after being taken; I had violent headaches, constant pain in the epigastric region, and bowels very much constipated, many times three or four days without a motion; occasional relief, but of a very temporary nature, was obtained by the pilulæ hydrargyri. I have been subject to these symptoms, more or less, for seven or eight years, but they have been often very severe during the last three or four years. Purgative medicines always produced great irritation and uneasiness for some time after their exhibition. Under these circumstances I took two four-grain pills of the inspissated ox-gall, not having had any motion for nearly four days; the pills were taken at four o'clock in the afternoon, and at seven, without even the slightest sensation of pain, or the common feelings arising from having taken purgatives, I had a free and copious motion, the excrementitious mass being in a pulpy form, and perfectly free from the indurated character I had been so long accustomed to. I repeated the dose next day with similar results. I experienced not even the slightest feeling of uneasiness; indeed, had I not known the fact, I should not have supposed that I had taken medicine of any kind. The acidity immediately left my stomach, and when under its influence the pains in my head and stomach were removed, and my bowels are now quite regular. From taking occasional doses, of course its effects are not sufficiently tested; but I have experienced more relief, with less unpleasantness, than

from any other of the many means I have ever resorted to ; in fact, its value in dyspeptic stomachs is incalculable.

Mrs. W—g, the wife of a painter, thirty-eight years of age, and mother of five children, had been subject to a very constipated habit from a very early period of her life, not unfrequently the space between evacuations extending twelve or fourteen days, and very commonly to ten days ; whether pregnant or not, the same tendency to constipation existed : she had sought advice from medical men of the highest repute and experience, but at most only received temporary relief ; her bowels almost immediately relapsed into their accustomed state, in spite of the best efforts to the contrary. In the endeavour to procure motions, she had frequently taken from ten to twelve ounces of the *ol. ricini*, and twenty or thirty drastic purgative pills before an operation could be procured, and then with great pain in the bowels, vomiting, &c., only parting with small balls of indurated *fæces*. Before giving the inspissated gall, I thought it advisable to test the obstinacy of the bowels by other means, and therefore ordered the following mixture :—

R Alb. Ovi. f. $\mathfrak{z}$ j.; Olei Ricini f. $\mathfrak{z}$ ij.; Olei Menthæ, pip.; Olei Crotoni, aa. m. iij.; Aquæ Puræ f. $\mathfrak{z}$ vj.
M.

Sumat æger cochlearia duo magna quâque tertiâ horâ.

After persevering two days with this, only one small motion was passed, and that with violent vomiting, and almost intolerable pain, the *fæces* having the character of hard balls. Waiting for two or three days for the excitement to subside, I then ordered the inspissated gall, according to the formula in the first case, giving two four-grain pills three times a day, or twenty-four grains in the day ; in little more than six hours from the first dose, and before taking the third, she had a very copious motion, without the slightest degree of sickness or pain, except for a few moments, caused by the hardened *fæces* passing the sphincter ani ; on the second day a second, and a third motion, as easy as the first, were passed, when I extended the intervals between the doses of the pills to six hours, viz.. sixteen grains per diem : from this time her bowels were perfectly regular, and without the slightest uneasiness. Three weeks from the commencement of taking the inspissated gall, she omitted the pills entirely for three days, when the bowels were

disposed to assume their former state; resuming the pills once in the day she became quite regular. It is now eight months since the first trial with the gall, and having left off the pills entirely for the last two months, she is quite regular in her bowels. The effects of the inspissated gall in this case were decided, and highly satisfactory. A more obstinate case, showing a more favourable result, could scarcely be adduced.

If I take the whole range of cases hitherto introduced as illustrative in this essay, *deficiency in quality or quantity of bilious secretion is the prominent and prevailing accompaniment*. If I were asked how the inspissated gall acts so as to procure a more soluble state of the fæcal mass, I should say distinctly, neither as a laxative, purgative, nor drastic, all such producing, to a greater or less extent, a stimulus to the intestinal coats, exciting them to propel their contents and to excite an extra secretion from the exhalants (the latter action, however, in my mind, is rather questionable); such is the generally allowed operation of the various degrees of cathartic medicines, and the common consequence arising from taking such is nausea, sickness, griping pains, &c., more or less, according to the character and dose of the medicine employed. Inspissated gall, on the contrary, produces not the slightest pain or sickness, and yet a motion can with equal (or greater certainty) be relied upon, and that in a form most easy and natural for propulsion. It is evident its action is not as a cathartic, but as a direct solvent to the accumulated hardened fæcal mass, *the consequence of deficiency of quality or quantity of bile in the alimentary canal*; as such, its effects may be produced without pain or uneasiness, which would not be the case if its action was on the principle of cathartics. I shall, in my next communication, show the effects of inspissated gall in diseased livers, dropsies, and in that numerous class of diseases arising from acidity in the first passages of children, with some experiments on the bile and fæcal matter.

[Dr. Clay has also found that the inspissated gall has a remarkable tendency to counteract the constipating effects of opium, which drug not only checks the secretion of bile, but almost all the other secretions of the body. The administration of gall, therefore, if this fact be further corroborated, will be a valuable addition to our list of remedies when we are wishful to

give opium but dread its constipating effects. In the case alluded to by Dr. Clay, the patient was taking large doses of the Pil. Scillæ Comp. c. Opio at bed-time, for a constantly irritating dry asthmatic cough: eight grains of the inspissated gall were also given every night, which completely counteracted those constipating effects of the opium which had previously existed. Dr. Clay further states that,]

In all cases of inarasmus, whether of children or in the atrophy of adults, I have in ox-gall a valuable remedy. In acidity of the stomach, &c. of children, it is of most decided, effectual, and immediate relief. The curdled vomitings, green motions, abdominal gripings, and restlessness immediately disappear, and a better state of general health is substituted; in all such cases there was a decided action on the kidneys, increasing the secretion. On looking at its effects upon children as just stated, particularly whilst at the breast, living almost entirely on milk, the result is not different to what we might suppose when considering the experiments of Baglivi, Lewis, &c. *‘That it prevents milk from turning sour, and dissolves it when in a state of coagulation;’ an antacid preparation is indicated, which is one of the peculiar properties of this remedy.* To show its direct effect upon hardened fæces, a child of sixteen months old passed a very hard motion with very great difficulty, not having had one for three days. I poured a solution of ox-gall over it in a vessel, immediately its chalky appearance was changed to a more healthy bilious colour, and reduced to a pulpy mass in half an hour; from this fact, I will suppose a case, (one which has frequently occurred in my practice,) an adult with hardened fæces in the rectum, almost, if not impossible, to pass without assistance; under such circumstances, what could afford a better prospect of relief than two or three ounces of recent gall, diluted with as much water, used as an injection. It is needless to observe I would pledge myself as to the result, viz., an immediate softening of the mass facilitating its propulsion.

So far as these experiments have progressed, the use of ox-gall in some diseases is of the most satisfactory character, presenting us with an excellent and peculiarly effective corrective for the many and various derangements of the alimentary canal, unlike many of our best medicines, inasmuch as in

whatever cases it is given, if no benefit results, no harm is ever experienced from it. Its action on the system is not as a purgative, but as a mere solvent of the *material* contained within the intestinal canal, producing no excitement to propel, but by liquifying the mass, facilitating its excretion. It is also a tonic—and in children to a moderate extent, a diuretic—but less so in an adult. It appears to have a peculiar and specific action on all that variety of diseases connected with derangements of the digestive organs, and from the proofs I have advanced, I believe it worthy of extensive trial. The preparation I have been in the habit of giving, is simply the recent gall of the ox slowly evaporated to the consistence of an extract, and afterwards made into pills, as in the formulæ already given; but if sufficiently firm, I prefer the simple extract made into pills without any addition; and if the gall be *recent*, it has very little smell, but an intensely bitter taste. The gall-bladder of a moderate sized ox will afford as much extract as will make one hundred four grain pills, and is an article both cheap and easy to procure. Trusting it may be further tested by others, I leave it to the profession confidently recommending it to their notice.

Medico-Chirurgical Review, July 1842, p. 279.

17.—ON COD LIVER OIL.

By Drs. ASCHERSON and KLENCKE.

[In the 25th Number of the British and Foreign Medical Review, is a notice of Dr. Bennett's work on this subject, in which many of the views of Drs. Ascherson and Klencke may probably be embodied. In the opinion of Dr. Forbes, however, Dr. Klencke's work "forms a completer and abler exposition than that of Dr. Bennett, and presents evidence more circumstantial and decisive of the success of the cod-liver oil treatment." In short, the *antistrumous*, and other virtues of this oil are now established.]

Dr. Ascherson conceives that oil-globules are essential to the formation of the elementary cells of animal tissue, and that these globules are constituted from fluid fat and albumen. He observed that on fat in a fluid state and albumen being brought into contact, a small quantity of the latter instantly formed a

case or pellicle round a globule of the former, and that from the globules thus produced, as we have already stated, the elementary cells of all tissues are formed. Now, according to Dr. Ascherson, while on the one hand normal bile furnishes a due supply of oil, chyme supplies a due proportion of albumen, and thus, by the union of these in the manner already described, the formative rudiments of animal tissue are produced.

Dr. Klencke, while admitting what Dr. Ascherson alleges as to the mutual effects of fluid fat and albumen, denies that the phenomenon is to be regarded as having any true resemblance to organic cellular formation, since the organic cell is first developed as a nucleus, and the periphery is formed posteriorly to the centre. He also observes that the oil and albumen of the globules could not enter the lacteals without being previously dissociated, if not decomposed; and he further notices that chyme, *prior* to its admixture with bile, contains fat. Throughout the whole of his work, Dr. Klencke assumes that fat used as food and reduced to albumen, may be reconverted to fat, in the mesenteric glands, in the blood, in the cells of the parenchyma of the liver, and in the gall-bladder; and that this reversion is favoured by a state of quiescence, as, for example, that produced by sedentary habits.

The author seems to think that cod-liver oil owes its power of improving chyfication to its resemblance to bile, to which he conceives the oil to be a succedaneum. Bile and the cod-liver oil resemble each other in so far as both contain fat, resin, and similar saline constituents. He does not think that the therapeutical action of the oil is due to its containing iodine, or bromine, or resin; but that in its oleaginous nature, and its general character as an animal oil, consist its medicinal efficacy. Elsewhere it is asserted that an aliment of the fat of pork or bacon produces all the beneficial consequences of the cod-liver oil. Its physiological properties are more minutely defined as consisting in stimulating the lymphatic and capillary systems, and the functions of secretion and excretion, and in improving nutrition; the deterioration of which is one of the omniform "bad effects of scrophulosis." It also replenishes the blood with an energetic and rich plasma, and, amid the activity of the vital processes to which it gives rise, promotes the absorption of all scrophulous depositions. According to Dr. Klencke, the use of the oil serves to develop in the chyle those non-

nucleated corpuscles, in the blood those colourless globules, and in the lymph the molecules peculiar to it, which furnish the formative constituents of the tissues; and the rarity and plenty, respectively, of which corpuscles in the three fluids now named are a sign of normal or of cachectic assimilation. In short, the principal therapeutical excellence of the oil seems to consist in its power of acting as a substitute for the bile, when that secretion is either vitiated in quality or deficient in quantity.

That cod-liver oil possesses the property now ascribed to it Dr. Klencke infers from a variety of experiments on animals, principally cats and dogs. He found that after ligature of the ductus communis, the chyle, in cases in which no cod-liver oil was given, wanted the non-nucleated corpuscles, and showed, on being allowed to rest, no fatty stratum: but exhibited both of these when the oil had been administered prior to the death and dissection of the animal.

There is a disease to which cats are subject closely resembling scrofula in man. The animal is scabby, emaciated; its belly is tumid; it has a ravenous appetite; its eyes are tearful, the lids inflamed, and the nose exhibits sores. In this state even the endermic application of the oil appears to operate beneficially. A cat in the condition described, was plunged, up to the neck, twice in the day, into "ordinary train-oil," and then kept wrapped in a flannel soaked in the same. The effect seemed to be equal to that of taking the oil internally.

The author also recommends inhalation of "an atmosphere impregnated with the oil gas" in cases of tuberculosis. The case of a lady labouring under "full-formed [ausgebildeter] tuberculosis" and hectic fever, is recorded, in which a cure was effected in four months by this method of treatment; although the oil seems to have been employed in other forms besides that of inhalation. The author conceives that, used in the atmospheric form, the oil acts partly by endosmosis; partly by "its stimulating effects on the capillary system and peripheric nerves of the lungs."

From the fact that the resin, which abounds in the darker coloured sorts of the oil, appeared in the stools of one of the cats to which he administered it, Dr. Klencke infers that it is not to the resin that the efficacy of the oil is due; and he presumes from analogy that the resin of the bile, in like manner, is purely excrementitious, and exerts no positive influence in chylicification.

In one respect the cod-liver oil differs from bile, namely, in its reaction being acid, while that of bile is alkaline. Yet we find that it is highly useful, and that too, probably, just on account of the reaction referred to, in cases of persons of biliary diathesis, the secretion of whose livers is very alkalescent and very inspissated.

Towards the end of his work Dr. Klencke gives similar cautions and directions as to his cases proper for the exhibition of the oil, which Dr. Bennett has done in his treatise.

We are surprised by a statement which occurs at an early part of Dr. Klencke's work. He says that between the action of the three principal sorts of oil, there is as great a difference as between that of the various preparations of mercury. We shall therefore briefly state the circumstances proper for the exhibition of these three sorts respectively; premising that, so far as regards colour, they are distinguishable into a tar-like black species, a fluid red, and a fluid brown and golden yellow species.

In atrophic states, and states of cachectic assimilation, in which the indication is to improve chylicification, the oleum subflavum, or the clearer and purer sort, is the suitable one. It is adapted for children and adults, with marked gastric irritability, but the action of whose bowels is languid. But if, after cachectic symptoms, there manifests itself a tendency to morbid formations or depositions, and it seems desirable to correct the constitution of the fluids by a stimulant action on the nervous, vascular, and secretory systems, the dark oil, or that which abounds with resin, and even the fusco-empyreumatic species, is indicated. The author states that he has cured gouty and rheumatic cases more speedily by these last sorts than by the subflavous variety. These diseases, in adults, require the red oil, which species is also peculiarly adapted for cases of nervous irritation accompanied by dyscrasia, as well as "inflammatory affections which seem to result from a vitiated state of the plasma."

Dr. Klencke and his "colleagues" appear to have treated successfully, by cod-liver oil, five cases of tuberculosis; two cases of acute hydrocephalus in children; three rachitic cases; two cases of caries scrophulosa; one case of chronic gout, with a cachectic constitution; four cases of spinal irritation, accompanied now with paralysis, now with pain in the backbone and pericardium; one case of epilepsy; nineteen cases of chronic

skin-disease; one case of the "purulent diathesis, without marked gastritic symptoms;" eight cases of inflammatory affection of the glands in all stages and varieties; two cases of chlorosis; one case of fluor albus; one case of gastro-malacia.

The author directs, as the smallest dose to begin with, three table-spoonfuls of the oil daily; which quantity may be increased daily to twenty, or until the patient comes to live almost entirely on the oil.

[Dr. Forbes however in conclusion states it as his opinion, that "the cod-liver oil will not in practice realize all the expectations which are entertained respecting it—that it will not prove radically curative in a majority of cases of chronic gout and rheumatism; nor effect any lasting amendment in cases of tuberculous lungs, whether the tubercles be solid or soft: but "still," he adds, "the strong and recurring evidence of the beneficial effects of the *oleum jecoris aselli* forbids us to doubt that it is an agent of considerable efficacy in some cases", and he trusts that his present notice of it "will induce members of the profession to embrace suitable opportunities of testing its merits and of reporting the results of their observations."]

British and Foreign Medical Review, Oct. 1842, p. 442.

[*The Skate-liver Oil* is said by some to be preferable as a therapeutic agent to cod-liver oil, "The disagreeable odour and taste of cod-liver oil has, it would appear, led to the substitution of the oil obtained from the liver of the skate (*Raia clavata* and *R. batis*) in place of it. In Holland and Belgium this oil is preferred to that of the cod, as being both less disagreeable to the taste internally, and also fully more efficacious in its therapeutic effects. MM. Girardin and Preisser were therefore induced carefully to analyze it, and found it to contain a percentage more of the ioduret of potassium than the cod-liver oil, whilst, in point of purity and other properties it appeared to be superior to it. They therefore recommend it as a valuable substitute for the more nauseous article at present in use."

Edinburgh Medical and Surgical Journal, Oct. 1842, p. 501.

Dr. Ure has suggested the adoption of cod-livers as a diet for patients who are recommended to take the oil. In order to prevent the loss of oil during the process of cooking, he recommends the livers to be immersed entire in boiling water, to which

a sufficient quantity of salt has been added, to raise the boiling point to about 220° Fahr. The sudden application of this high temperature coagulates the albumen of the liver, and prevents the escape of the oil. When the liver is cut, the oil exudes, and mashed potatoe may be used as a vehicle. Dr. Ure informs us, that having been advised to take cod-liver oil, he found the nauseous flavour very objectionable, until he contrived the above plan, which he finds to answer extremely well.

Pharmaceutical Journal, Nov. 1, 1842, p. 361.

[Dr. Roesch affirms that scrofulous affections are produced by an excess of acid matters in the fluid of the body; and that cod-liver oil is therefore one of the most suitable remedies, seeing that it possesses the rare properties of being at once a stimulant, a roborant, an antacid, and nutrient.—*Med.-Chir. Rev.*, July 1, 1842, p. 259.]

18.—OBSERVATIONS ON CREASOTE.

By DR. ROSE CORMACK, Edinburgh.

Nature of its Action.—Dr. C. has satisfied himself, by experiments on the lower animals, that creasote, in large doses, is a narcotico-acrid poison; and that it resembles prussic acid in its sudden depressing action on the heart, as well as in the temporary nature of its toxicological operation. In medicinal doses, it is almost immediately sedative and calming; but these effects are of short duration; *so that it is a drug which requires to be given in often-repeated small doses.*

Internal Administration.—*Use in nausea and vomiting.*—Creasote is one of the best medicines which we possess for stopping vomiting. In the vomiting of pregnancy, an affection so distressing to the patient, it seldom fails. If the sickness come on regularly after rising in the morning, Dr. C. prescribes two or three drops to be taken five or ten minutes before getting out of bed. This generally proves effectual: but if it does not, the patient ought to be directed to repeat the dose in two hours. In more troublesome cases, when the sickness occurs at intervals during the day, one or two drops should be given every two, three or four hours.

[In a case communicated by Professor Simpson, the creasote failed to relieve the distressing sickness, while doses of *acetate*.

of lead proved successful. In the sickness and vomiting following a drinking debauch, creasote is sometimes very useful. In such a case a single dose of four drops was found to relieve speedily. In sea sickness it will often be found efficacious; but "it is worthy of notice as a general remark that creasote, though excellent in allaying vomiting, often excites it when it does not exist."]

In *vomiting connected with hysteria*, creasote proves a very valuable remedy, and so far as Dr. C.'s experience goes, he is inclined to think, that Dr. Elliotson and others, who have recommended it very strongly in this class of cases, have not done so without sufficient cause. In at least ten cases of this kind, Dr. C. has tried it in doses varying from two to eight drops, and in all, excepting one, it proved an admirable medicine, not only relieving the vomiting, but also apparently, in most instances, calming the nervous excitability. In the case in which it apparently did no good, the dose could not be increased beyond six drops thrice a-day, on account of the vertigo which it occasioned. The patient was ultimately much benefited by sponging with cold water, and taking four grains of the saccharine carbonate of iron three times a-day. *Case.*—Patient—A young woman, exhibiting many of the anomalous symptoms so common in hysteria. When first visited, she was emaciated, weak, nervous to a distressing degree: stated that she vomited her food, and had done so for ten days, but had had sickness in the mornings for a much longer period. She had been trying various tonics. None of them did her any good, and they were generally rejected soon after they were swallowed. Dr. C. ordered her to breakfast in bed, and that sparingly, on the morning following his visit, and half an hour before doing so, to take a dose of a mixture, containing three drops of creasote, in acetic acid. After her meal, she had only slight nausea. She sponged her chest with vinegar and water, and before a light dinner, repeated the dose, but had a good deal of vomiting, though not so much as usual. As the creasote had produced no giddiness nor uneasiness of any kind, the quantity was increased on the following day to five drops before breakfast and dinner. For a week after this, she had neither nausea nor vomiting; but both having then slightly returned, for five days the dose was increased daily a drop, till at last, she was taking ten drops twice a-day. From this time the vomiting did not

return for three weeks, during which time she persevered in the medicine, and under its use, daily gained strength and flesh; the catamenia, which had formerly been scanty, became much more abundant. As she now complained of headache, and attributed it to the creasote, it was discontinued, and the saccharine carbonate of iron substituted, in doses of four, and afterwards five grains, three times a-day, in pills made up with the extract of gentian. She continues to use the iron, and has latterly, with great benefit, taken the shower-bath. Once or twice the vomiting has returned, and been promptly relieved by the creasote. In this case, the creasote did more probably, than relieve the vomiting. It is, however, proper to state, that along with the creasote, from the commencement of the treatment, great attention was paid to the bowels, which had formerly been neglected. She took the compound aloes and assafœtida pill so as to have at least one stool daily, whereas formerly, she rested satisfied with two, or even with one a week; this of itself must have greatly contributed to the cure.

In all of the hysteric cases of vomiting, there existed constipation, which was actively dealt with; but as in the case now detailed, the vomiting was relieved by the creasote, before the purgative treatment could have developed its effects. From a number of cases, creasote appears to be valuable in hysteria, not only for the vomiting, but also in assisting to control many of the fantastic and distressing symptoms of this Protean malady.

Creasote as an external application.—In *toothache*, creasote generally gives immediate relief from pain, when properly applied to the exposed nerve, in the cavity of a carious tooth. Dr. C. has in his own person made repeated trials of it, and is quite convinced, that though it gave respite from pain, it hastened the destruction of the teeth. This observation has been repeatedly made by others.

In *arresting hæmorrhage* from small vessels, or the oozing of blood from abraded or cut surfaces, bleeding ulcers, and leech bites, a creasote ointment or lotion is often very effective. It acts by coagulating albumen, and thus forming a crust. Pure creasote may be tried when the bleeding is more profuse. In the hospital at Cadiz, Dr. C. saw it used with complete success, in the oozing of blood from the wound of a compound fracture. He never had the opportunity of seeing its power over pretty active hæmorrhage, in the human subject, except in this case.

From experiments made on dogs and rabbits he is, however, quite satisfied that creasote possesses, in a high degree, the power of arresting hæmorrhage from the capillaries; but in wounds, which it is desirable should unite by the first intention, its use should probably be abandoned as soon as the bleeding is fairly subdued, as, by uniting with the lymph effused, it forms a substance, which would act as injuriously to the progress of the reparative process, as any other foreign body.

In *chronic venereal ulcers*, Dr. C. has repeatedly used creasote with great advantage. It answers very well to apply it pure *once*, when there is great deficiency of action, and subsequently to employ an ointment of from four drops to thirty, to the ounce of lard. The lotion is also a very excellent form of application. In *phagedenic ulcers*, *ulcerated chilblains*, and sores yielding a sanious discharge, Dr. C. has often used creasote with great benefit.

In the application of creasote to ulcers and other solutions of continuity, there are several facts which the practitioner should bear in mind. *It is important to remember that water only dissolves one eightieth part.* If an excess of creasote be present, it will float on the surface in small globules, and can therefore very easily be removed; but if this is not done, when the lint is dipped in the lotion, these globules will adhere, and in this way, a very different wash from what was intended, is placed upon the sore. In very few cases, where the raw surface is extensive, pure creasote ought to be applied to the whole of it, as severe irritation is generally the result.

Lond. and Edin. Journal of Medical Science, Oct. 1842, p. 945.

19.—*Mode of giving Turpentine for Tape Worm.* By DR. BELLINGHAM, Physician to St. Vincent's Hospital, Dublin, Professor of Botany, &c. [Dr. Bellingham does not think it necessary to administer this remedy in the large doses which were formerly given. He states that it will be equally effectual if the system be kept for some time under its influence by giving it in moderate doses, two or three times in the twenty-four hours, occasionally exhibiting a larger dose; and if no cathartic effect follows, he combines it or follows it up with castor oil.]

The mode which I have found most effectual of exhibiting this medicine against the tape-worm, is as follows:—I com-

mence (supposing the individual to be an adult, and not to have taken oil of turpentine previously) with a small dose, as from half a drachm to a drachm, repeated three times a day; by this means I ascertain whether a large dose may be given with safety, as if half a drachm or a drachm produces strangury, I never venture upon a large dose. On the third or fourth day I give an ounce either with or without the same quantity of castor oil, and repeat it again the following day. This will probably bring away a considerable portion of the tape-worm. I then again diminish the dose to half a drachm or a drachm, repeated as before for four or five days, after which the larger dose is exhibited once or twice according to circumstances. The patient is then allowed to rest for a few days, when I recommence with the original dose of half a drachm or a drachm, which is to be persevered in for a week or a fortnight. It is in general difficult to induce the patient to continue the medicine for such a length of time. If we can, however, this plan of exhibiting oil of turpentine is certain to remove the complaint.

Dublin Medical Press, Sept. 28, 1842, p. 195.

20.—*Liquor Taraxaci*. A very elegant preparation has been introduced under the above title, and which, from the strong taste it possesses of the recent root, has been much used by medical men who have confidence in the remedial power of dandelion. The following formula has been communicated to us:—

Dandelion roots, perfectly clean, *dried*, and sliced, 18 ounces.

Infuse for 24 hours in a sufficient quantity of cold distilled water to cover them.

Press and set aside, that the feculæ may subside; decant and heat the clear liquor to 180° F., so as to coagulate the albumen; filter the liquid whilst hot, and evaporate in a drying room, or by means of a current of warm air (a water or steam bath will not succeed so well), until the product shall weigh 14 ounces. To this must be added 4 ounces of rectified spirit. Should the roots not have been perfectly cleansed, the product must be digested with pure animal charcoal. If properly prepared, *Liquor Taraxaci* resembles in colour pale sherry, and possesses the acrid taste of the fresh root in an eminent degree. The dose is from one to three fluid drachms.

Medical Gazette, Nov. 4, 1842, p. 191.

21.—*The Potatoe in Sea Scurvy.* By W. DALTON, Esq., M.R.C.S., Cheltenham. [Mr. Dalton gives his experience of the nature of this article in sea scurvy as follows:—]

On leaving England, in January, 1823, I found on inquiry that the ship was not, as usual, supplied with lime-juice, but bountifully with potatoes; and great care was taken, as the stock decreased, to keep some for what the sailors aptly termed “scurvy-grass,” which consisted of potatoes, peeled and sliced like cucumbers, with the addition of a little vinegar, to make them more palatable. The crew were supplied with a quantity of scurvy-grass every morning, before breakfast, averaging from two to three potatoes each man: this was partaken of eagerly by the old and experienced seamen, and shortly by the others from their recommendation and example.

In order to show how highly raw potatoes were esteemed as an antiscorbutic, I may mention a fact of which I was an eye-witness. On our arrival at Valdivia, on the coast of Chili, one of our men was observed by a female to take a potatoe from a heap, and very uncereimoniously and eagerly eat it. She called his attention to a quantity of apples, and tendered some to him; but although he accepted the apples, he assured her that he had not made a mistake. We remained at sea, on various cruises, during periods of from six to nine months each. On one occasion we were exposed to all the consequences arising from damp and moisture for six months, having been cruising near the equator in the wet season, and I believe that during that period we never passed a day without rain; at the same time, we were living on salt provisions, with a very scanty allowance of “scurvy-grass.” We returned to England after an absence of two years and ten months, never having had scurvy among the ship’s company,* and had the satisfaction of seeing every individual that embarked with us return to his native land.

A second voyage, of nearly equal duration, was attended with similar results.

As a substitute for potatoes, pumpkins, plantains, the recent juice of limes, &c. &c. were given; but of all others the raw potatoe is decidedly the best antiscorbutic. I may add, that in

* Excepting slightly in one instance following severe injury to the feet, produced by a fall from aloft; and on that occasion we had been nine months at sea, on our arrival at New Zealand in 1825.

one instance we presented a peck of potatoes to a ship's crew consisting of about forty persons, many of them having incipient scurvy. They were relieved, and enabled to prolong their cruise at sea.

Lancet, Sept. 3, 1842, p. 789.

[This account of Mr. Dalton's is corroborated by Mr. Berncastle, (see *Lancet*, Sept. 24, 1842, p. 892) who thinks, however, that the potatoes are equally efficacious when boiled, which would certainly be a more palatable mode of taking them.]

22.—*Action of Carbonate of Potash on Gum Resins.* By Mr. HULSE. Some years since, my attention was drawn to the action of carbonate of potash on myrrh, which induced me to try its effect in reducing other gum resins, and the result was perfectly satisfactory. The intrinsic value and utility of this alkaline carbonate as an agent, when used according to the formulæ hereafter referred to, will become manifest to the practitioner and the pharmacist, especially in the preparation of the compound mixture of iron, the compound pills of iron, the compound galbanum pills, and, indeed, every other mixture and pill which contains a gummo-resinous ingredient in its composition.

With regard to myrrh, if one part of carbonate of potash be added to two parts of myrrh in the lump, and rubbed together, the alkali produces complete saponification; and if to this be added medicated or distilled water, we obtain an elegant emulsion of myrrh, and nearly the whole of the gum resin is retained in suspension, which would not be the case without the aid of the carbonate of potash. If the compound mixture of iron is prepared by triturating the myrrh with carbonate of potash, then with the usual proportion of sugar, using the raw instead of refined, adding first the rose water, then the sulphate of iron, powdered, and, lastly, the spirit of nutmeg, it will not be an unsightly mixture, and the precipitate will be very trifling.

Again, in the compound pill of iron, if carbonate of potash is used instead of carbonate of soda, and raw or muscovado sugar in lieu of the refined, a pill mass can be compounded with less trouble than by following the college formulæ, and which will retain a convenient pilular consistency for any reasonable period.

℞ Myrrh in lump, two drachms, reduce it to powder in an iron mortar with Carbonate of Potash, one drachm, then add Sulphate of Iron, powdered, one drachm; Raw Sugar, one drachm.

Mix, and beat all into a mass, without any liquid. Attention to this last remark is necessary, for the addition of any liquid renders the mass too soft, the raw sugar being sufficient to bring it to a proper consistence.

The solubility of this pill is such, that after having been made six months, I put two pills, of five grains each, into a glass of water, about the temperature of the stomach, and they were completely disintegrated in the course of two hours. If water will thus serve to dissolve these iron bullets, as they are sometimes termed, we may expect the fluid of the stomach will have a much quicker action upon them.

I will now refer to that hitherto troublesome preparation, the compound galbanum pill. This pill, which to most gentlemen has ever been an annoyance, can be as easily and as readily prepared as the preceding one, and becomes as tractable and as convenient for making into pills as any other mass. Without presuming to deviate materially from the instructions given in the Pharmacopœia, I proceed as follows:—

℞ Myrrh in lump, and Sagapenum, of each one drachm and a half; Galbanum, one drachm; Assafoetida, half a drachm.

Triturate these with two drachms of carbonate of potash, in an iron mortar, until the whole are sufficiently reduced, add Raw Sugar, two drachms, and beat all together into a mass, without any liquid, which mass will retain its consistency for any reasonable period.

The pill of aloes with myrrh, compound squill pill, compound rhubarb pill, and other similar preparations, will be considerably improved if made with the assistance of carbonate of potash and raw sugar; but with every other than the compound galbanum pill and compound pill of iron a small portion of water must be used.

The raw sugar (*saccharum non-purificatum*), as an ingredient in compound pill of iron, is decidedly preferable to the refined, which alone will not form a mass.

In all pill masses and mixtures containing gum resins, the pharmacopolist will find it preferable to use ingredients that have been powdered in his own premises.

To show how readily the dispenser may obtain these in the greatest purity, I have placed upon the table samples of six of the most valuable medicinal gum resins, reduced to powder by carbonate of potash with great facility; their odour and flavour are particularly good; but the colour of some of them is not so bright as when obtained from the wholesale druggist.

In examining the solubility of gum resins in water with the aid of carbonate of potash, I find them to vary considerably. Myrrh is the most soluble, ammoniacum is next, sagapenum third, while galbanum and assafoetida do not appear to be much, if at all, assisted by it. In galbanum there is a second stratum of precipitate, very flocculent, lying upon one more dense, but that is not the case with any other; and I question if it would be found so invariably in every sample of the gum, for the analysis of gum resins is differently stated by chemists, evidently owing to the differences in their qualities and composition.

This subject leads me to notice the practice of some of our brethren who keep, ready prepared, an emulsion of myrrh, for the purpose of dispensing Griffith's mixture more quickly. This is very objectionable, inasmuch as the emulsion by keeping becomes thin, and on mixing the other substances, a rapid precipitation takes place, leaving the bottle more than half-filled with a nearly transparent fluid.

Pharmaceutical Transactions, July 1, 1842, p. 8.

23—*Treatment of Chlorosis.* By T. W. B. KIRKBY, Esq., M.R.C.S. [We publish the following formulæ on account of their judicious composition; and as ready reference to formulæ is often desirable, we think they will be found as good as can be met with, and are not only adapted to chlorosis but to many other diseased states of the system.]

In treating chlorosis, our first object should be to endeavour to get the viscera into a more healthy state of action, and this will be best done by mild aperients. The compounds of aloes, as the decoct. aloes comp.; pil. aloes comp.; pil. aloes c. myrrha; will all be found desirable remedies for this purpose; or a few grains of the blue pill at bed-time, followed by a draught with

the decoct. aloes comp., in the morning. Dr. Ashwell also recommends the injection of a pint of warm water two or three times a-week into the rectum, as being most efficacious in promoting the peristaltic action, and unloading the large intestines. Violent purging must be avoided. After the full evacuation of the bowels, any of the preparations of iron, as the ferri sulphas, ferri ammonias, ferri carbonas, the mist. ferri comp. ferri iodid., may be prescribed, as being valuable remedies in chlorosis. We have found the following formulæ of great benefit:—

R̄ Ferri sulphatis, gr. xxiv.; quinæ disulphatis, gr. xij.;
extr. gentianæ, qss.

M. Ft. pilulæ, xij.; cap. j. vel ij., ter die. Or—

R̄ Quinæ disulphatis, gr. xij.; ferri sulphatis, gr. xxiv.;
pulv. opii, gr. iij.; extr. gentian, qss.

M. Ft. pilulæ, xij.; cap j. vel ij., ter die.

Dr. M. Hall recommends, after the evacuation of the bowels, pills consisting of two grains of the Barbadoes aloes, and the same quantity of the sulphate of iron, taken daily during dinner, as most efficacious; indeed, he has found them almost specific. Dr. Copland recommends the following should be taken either during, or after dinner:—

R̄ Aloes, socot.; ferri sulphatis, aa., gr. ij.; gum mastic.,
gr. j.; pulv. capsici, gr. ij.; syr. simpl.; vel olei caryoph,
q. s.

M. Ft. pilulæ duæ. Or—

R̄ Aloes, 3 ij.; assafœtidæ; myrrhæ, aa. 3 ss.; ferri.
sulphatis, 3 j.; caryophyllorum in pulv., 3 j.; pulv.
capsici, gr. xxvi.; balsam. canad., q. s.

M. Ft. pil. lxvi.; quarum capiat, i. vel ij. pro dose.

In addition to the above remedies, warm clothing, regular exercise in the open air, particularly on horseback, nutritious diet with a moderate quantity of wine, must be enforced. Patients suffering under this disease, and residing in large cities, will often more rapidly recover by removal to a country residence, or a visit to the sea-coast. Sea-bathing, when a *sufficient reaction to the skin follows*, will be also serviceable. The above means are often sufficient to remedy the disease. In the more protracted cases, attended with difficult or scanty

menstruation, Dr. Copland recommends the tinct. ferri ammoniati, or the tinct. guaiaci ammoniati, and phosphate of iron, in preference to the sulphate of iron. The decoct. aloes comp. as the most suitable aperient. The ammoniacal injection, composed of one drachm of the pure liquor ammoniæ, to a pint of milk, and injected daily into the vagina, is sometimes useful in promoting the catamenial secretion.

The following summary of the treatment adopted by Dr. Ashwell in chlorosis, is copied from the first volume of the Guy's Hospital Reports. I would commence (he says) the treatment by especial attention to the digestive organs and alimentary canal; for I regard these, as a cause, second only to the peculiarity of constitution already mentioned. The deteriorated quality of the blood, and its defective quantity, may both owe their origin to impaired digestion and nutrition. I have alluded to the jaundiced hue of the complexion, and of the surface generally, as frequently leading to the suspicion of hepatic disease. The diagnosis will be made by a careful examination of the region of the liver itself, of the urine and the fæces, which will prevent the possibility of being misled by the colour of the lips and conjunctiva. The best aperients are aloes, rhubarb, the sulphate of soda and manna; and if an alterative be necessary, the hydrargyrum cum creta. Nor must we forget that the injection of a pint of warm water two or three times a week into the rectum, is of all measures the most efficacious in aiding peristaltic action, and in removing the load off the intestines. The compound decoction of aloes, with the tinct. cardam. C.; the compound aloes pill, with the oil of cassia and hyoscyamus; and the vinum aloes, with the compound tincture of rhubarb, are the forms of these medicines I prescribe. The combination with any purgatives or aperient remedies of mild cordials, is exceedingly important. The following may be advantageously exhibited:—

R̄ Pulv. rhei., 3 ss.; magnes. carbon., 3 ss.; confect. aromat., ʒj.; aq. cinnam., 3 ix.; tinct. cardam. co. 3 j.;

M. Ft. haust bis ter die in septimanâ sumendus;

R̄ Sodæ sulphatis., ʒ iss.; pulv. rhei., 3 ij; magnes. subcarb.; sodæ subcarb. aa., 3 iij.; pulv. aromatici, 3 ss.

M. Ft. pulv. aperiens. Sumat cochl. j. vel ij., parva, bis terve in septimanâ, ex aquâ pura.

So soon as the repugnance to them can be conquered, nutritious animal diet, and mild malt liquor, will be productive of benefit. The improvement of the digestive organs, indicated by return of appetite and the healthier condition of the bowels, evinced by their natural and daily evacuation, are generally accompanied by alteration of the complexion, and by the partial disappearance of the chlorotic hue, rarely by the immediate establishment or return of the catamenial secretion. At this crisis, some of the preparations of iron may be exhibited. The following may be prescribed :—

R_x Ferri ammon. ʒ iss. ; extr. humuli ; extr. papaver. alb. aa., gr. xv. ; ol. cassiæ, m. xv. ;

M. Ft. pil. xxiv., sumat. j., vel ij., bis terve quotidie.

Where there is torpor of the system, flatulence, and hysterical depression, a teaspoonful of the annexed mixture, in water, may be swallowed with each of the pills.

Tinct. humuli, columbæ, vel gentian co., ʒ iss. ; tinct. lyttæ, ʒ j. ; spt. ammon, ar., ʒ iij.

M. Ft. mist.

Quinine, sarsaparilla, gentian, and zinc are remedies of acknowledged power ; and in a variety of instances, where the sulphate, or other preparations of iron, appeared injurious, I have given, with decided good effect, the following powder, either once or twice a-day :—

R_x Ferri subcarb., gr. viij. ; pulv. ipecac., gr. j. ; hydrarg. c. cretâ, gr. ij. ;

M. Ft. pulv.

Chalybeate waters are sometimes extraordinarily efficacious. At what time shall emmenagogues be employed ? When the health is so far improved that there is less pallor, with regularity of bowels, and more and better blood.

The iodide of iron may be given with undoubted success, especially when glandular enlargements, and other indications of a strumous habit, have been associated with the chlorosis. I give the subjoined form :—

R_x Ferri. iodid., gr. xvj. ; tr. columbæ, vel gentian, co. ʒ j. ; aq. distillat. ʒ vij. ;

Ft. mist. sumat, cochl., ij., magna, bis, terve quotidie.

The iodide of iron sometimes occasions headache, vertigo, nausea, heat, and a sensation of weight in the hypogastrium. These symptoms may be removed by taking a teaspoonful of the carbonate of magnesia at night, by the temporary omission of the medicine, or by diminishing the dose.

Medical Times, June 18, 1842, p. 183.

24.—*On Emmenagogue Medicines.* By T. W. B. KIRKBY, Esq., M.R.C.S. Emmenagogue remedies, or those medicines that are supposed to possess a specific power over the womb, and which have been resorted to by medical men in cases of amenorrhœa for reproducing the menstrual secretion in conjunction with the general treatment, the following appear to have proved most successful.

Savine—from five to ten grains of the powdered leaves three times a day, or a drachm of the compound tincture twice a day.

Dr. Locock recommends a combination of myrrh, aloes, sulphate of iron, and the essential oil of savine.

Ergot of rye—five to ten grains of the powder two or three times a day, boiled in a little milk. In very irritable habits the ergot must be cautiously administered, as it has been found, after a few days, to produce sometimes violent and even highly dangerous spasmodic attacks.

Iodine in form of tincture, with hydriodate of potash—ten to twenty or thirty drops, two or three times a day.

Strychnine—one-tenth to one-fourth of a grain, two or three times a day. This medicine must be suspended for a few days, should headache or twitching of the muscles follow its exhibition.

Madder, myrrh, guaiacum, mustard-seed, valerian, electricity, aloes, have all had their advocates.

In Dr. Ashwell's report of obstetric cases, vol. 3, Guy's Hospital Reports, out of nine cases of amenorrhœa admitted into the hospital, seven simple and two complicated, "six of the simple cases occurred in the persons of delicate females, and the remaining patient was a strong active plethoric girl, of 19. The former was treated by aperients and metallic tonics; four employed the ammoniacal injection with benefit; while electricity in some cases seemed to be of great service in exciting menstruation."

In cases of *amenorrhœa combined with epilepsy*, D. A. employed the following formulæ, recommended by Dr. Bright:—

R. Pulv. digitalis, gr. j.; Pulv. Myrrhæ, gr. ij.; Ferri sulphatis, gr. j.; Syr. q. s. ft. pil. ter die cap.

“Under this treatment the fits became diminished in number, and the menstrual function normally established.”

Medical Times, April 23, 1842, p. 61.

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25.—*Treatment of Erysipelas.* By M. VELPEAU, Paris. M. Velpeau declares, that having frequently failed with the usual remedies employed against this malady, such as compression, the flying blister, nitrate of silver drawn across, or around the inflamed surface, white precipitate ointment, the various acids, &c. a new idea suggested itself to him, from a consideration of the modifications induced in the blood by the preparations of iron. He was thence led to employ as a local application a solution of the sulphate of iron, in the proportion of one ounce to a pint of water, or an ointment containing two drachms to an ounce of lard. The ointment he considers a more convenient application for the head, neck, and trunk. Great care is, however, requisite in thoroughly powdering the salt before mixing it with the lard. It should then be rubbed freely over the whole inflamed surface, and even a little beyond. The solution is employed by means of compresses, wetted every six hours, and maintained on the part by means of a bandage. The skin must be kept constantly moist. One of the inconveniences of the sulphate of iron, is that of reddening the linen with which it comes in contact. No means of neutralising this effect has been as yet discovered. M. Velpeau states that in twenty-four cases in which he employed this application, the most marked and rapid influence was exerted over the progress of the eruption. In no instance did the same spot of inflammation resist this means more than twenty-four or forty-eight hours. A singular fact however, was, that erratic erysipelas, when overcome in one part, was not prevented showing itself in other regions already smeared with this application. This would seem to indicate that this remedy, like so many others, is simply curative and not preservative. There is only one point more to which we shall refer, and that is, whether if, as M. Velpeau states, the sulphate of iron succeeds in these cases from its action on the blood, it would not be better to administer it at once internally? This would seem to be but a necessary

conclusion from M. Velpeau's own words: "*The fluids of the diseased region (the alteration of which is the direct cause of the erysipelas) produce symptoms of a general character, when they pass into the current of the circulation.*" The authority of M. Velpeau is, however, a sufficient recommendation for the extended trial of this preparation in the treatment of erysipelas.

Ibid, Aug. 26, 1842, p. 297.

26.—*On some Preparations of Iron.* By JOHN TODD, M.D. [The following formulæ are recommended by Dr. John Todd, as valuable and economical:]

LIQUOR FERRI POTASSIO-CITRATIS.

R_x Acid. Citric. Crystallizat., ℥j. 3v; Potassæ Carbonatis, 3vij; Ferri Sesquioxidi, ℥j; Sp. Ammon. aromat., q. s.; Aquæ distillat., ℥xxiv.

Dissolve the acid. citric. and potass. carbonat. in the water, when the effervescence has ceased, add the ferri sesquioxid., and digest for twenty-four hours (frequently stirring) in a gentle heat; filter the liquid, and neutralise any excess of acid by dropping in, gradually, sp. ammon. arom., until it is saturated. The liquid is of a reddish-brown colour, not precipitated by alkalies, nor altered in colour by the ferrocyanide of potassium, or tincture of galls. The taste is slightly styptic, though not unpleasant. It will be seen that there are two equivalents of acid. citric. combined with one equivalent of potass. and one equivalent of the ferri sesquioxyd.:—*one drachm* of this solution contains *five grains* of the dry ferri potassio-citras.

An agreeable syrup may be made by dissolving sacchar. alb., lb. j in f ℥ viij of the solution, and liquefying by a gentle heat. We have thus f ℥ xvij of syrup; consequently f ℥ j will contain 2.25 grains.

SYRUPUS FERRI IODIDI.

R_x Iodine, grs. 362; Ferri Limatur., grs. 90; Aquæ Distillat., ℥ viij; Sacchar. alb., lb. j.

Digest the iodine and the iron in the water until it become nearly colourless; pour off the clear liquid, and dissolve the sacchar. alb. with a gentle heat. When cold, pour off the clear syrup, and keep it in half pint bottles well corked, and in the dark. The deoxydising agency of the sugar renders it unne-

cessary to keep a piece of iron wire in the bottle. As no precipitate takes place, except when exposed to a strong light, and air combined. In this, 362 grains of iodine combined with 80 grains of iron, forming 442 grains of ferri iodidi, dissolved in water $\mathfrak{z}$ viij., which by the solution of the sacchar. alb., lb. j. makes $\mathfrak{z}$ xvij., being three grains of ferri iodidi in f 3 j. of the syrup.

Lancet, Sept. 10, 1842, p. 822.

27.—*Useful form of Syrupus Ferri.* By Mr. C. R. AIKIN. The effect of sugar in depriving metallic solutions of oxygen, wholly or in part, is well known to chemists. Thus the acetite of copper, boiled with sugar, gives a brown protoxyde of copper; sulphate of copper, in like manner, lets fall part of the metal in the metallic state. The salts of iron may long be kept, by this means, in low oxidation, and by the assistance of tartaric acid may be saturated with alkali without apparent change.

In this way a very useful *syrupus ferri* may be prepared with great ease thus:—

In a Wedgwood evaporating dish, dissolve 80 grains of sulphate of iron and 40 grains of acid of tartar in an ounce and a half of distilled water. Add liquid caustic ammonia, which first gives an olive-green precipitate that re-dissolves by a small excess of the alkali, to a clear grass-green liquid. Evaporate this slowly, nearly to dryness; then re-dissolve in water, with a few drops more of the alkali, and make up the quantity to a fluid ounce and a half. Add to this two ounces of sugar, and boil briskly for a minute or two, and the syrup is made. These quantities furnish about two ounces and a half of a very dark, clear hair-brown syrup, which readily dissolves in water without becoming turbid. The syrup may be made in one vessel in a very short time; and it appears to keep for an indefinite length of time without fermenting or changing in any way. In the proportions here given one drachm of the syrup contains four grs. of the sulphate of iron mixed with the tartrate of ammonia.

Medical Gazette, May 6, 1842, p. 256.

28.—*Tobacco in Hysteria.* By Dr. J. H. THOMSON, of Salem, New Jersey. [In a case of hysteria, related by Dr. J. H. Thomson, where all the usual remedies seemed comparatively useless, tobacco was attended with extraordinary success, but as

this is but a solitary case, we cannot depend upon it, till further trials prove it to be more worthy of confidence.]

The convulsions appeared to increase in violence; they lasted for several hours, and left the patient in an extremely exhausted condition. During the attack her countenance was so altered in appearance and expression that her most intimate friend could not have recognised her. Her throat was the seat of chief distress; desperate and continual efforts were made as if to tear away something which was choking her. A distressing "clucking" noise was made, as if the glottis was spasmodically opened and closed. Under these circumstances I determined to make trial of the powers of tobacco. On the next attack some leaves were procured. One was placed for a few minutes in hot water, and then spread over the epigastric region of the patient. In fifteen minutes the hysterical symptoms had all disappeared. The patient felt sick and continued so for some time, but did not vomit. At the usual hour on the following day, and also on the day after, she was again seized, but on both occasions the attack was arrested *in limine*, by the tobacco, and returned no more. No other means were employed. The patient slowly returned to her former state of health.

This is but a solitary instance of the use of tobacco in one of the Protean forms of this disease, and I am by no means disposed to place much reliance upon isolated cases. The facts are given as they occurred. It will be for further experience to confirm the efficacy of the remedy, or to reject it as unworthy of confidence in this disease.

American Journal of Medical Science, April, 1842, p. 498.

29.—*Treatment of Croup following Ulcerated Throat.* By R. W. GIBBES, M.D., Columbia. [It seldom if ever happens that an attack of croup following cynanche maligna is cured. The following case illustrates the use of a *saturated* solution of nitrate of silver in such a disease. The child, four years old, had an attack of ulcerated throat which seemed to have passed away before the attack of croup came on. Croup followed, and on examining the throat, there was seen an ulcer half an inch in diameter over the left tonsil, and the fauces greatly inflamed. The usual treatment was adopted, but the symptoms gradually increased in severity; "the stridulous breathing became constant and very shrill, the restlessness increased, and high fever

set in with great thirst." Twice was a vein opened in the arm until the pulse yielded.]

I now directed calomel two grains, antimonial powder four grains, ipecacuanha half-a-grain, to be given every hour, which I continued for six hours, and then increased the ipecac. to a grain, and continued it every second hour until thirty grains of calomel had been given, without any relaxation of the skin or motion of the bowels—a dose of castor oil produced no action, and on Thursday enemata were used with good effect. The warm bath was twice resorted to, but with no benefit. The breathing became abdominal, the pulmonary murmur not audible to the ear applied to the chest—the cough spasmodic and frequently threatening suffocation, the voice sibilant, and the child very loth to speak. The fever continued, the pulse being 140; although I had applied the solution of caustic (5 grs. to the oz.) to the fauces, once in five or six hours, I found them now covered with a thick tenacious albuminous exudation (diphtherite); and the constant threat of suffocation whenever cough came on, induced me again to administer sulph. copper, which afforded relief by producing vomiting, shreds of membranous matter being thrown off. The mitigation by vomiting being but temporary, and the swelling around the ulcer being disposed to increase, I made a *saturated* solution of nitrate of silver, and applied it freely by a small sponge to the ulcer and fauces, thrusting it far back into the pharynx.—I found every application followed by relief and repeated it every two or three hours, where I found the albuminous accumulation present. Constant redness of the cutaneous surface was kept up by turpentine, on the sides and back of the neck; on Thursday night she slept more, she began to fill the lungs better, the chest heaved and the abdominal respiration diminished. There was also a rattling of looser and more attenuated secretion in the bronchia and trachea, the hard ringing shrill crowing was shorter during inspiration. On Friday the fever diminished, and about mid-day the skin became cooler. I now directed warm serpentaria tea and syrup of squills every second hour, which towards evening brought on a free perspiration; at night she slept better, coughed but little and breathed more freely. The ulcer had contracted, the plastic exudation had ceased, and all the symptoms continued to become more favour-

able, excepting that she could not speak above a whisper; she had no return of fever; on Sunday the ulcer was healed.

Ibid, p. 364.

30.—*Citrate and Ammonio-Citrate of Iron.* The citrate of iron has lately been introduced, and is much recommended as a tonic. It is important, however, to observe, that there are two salts similar in appearance, which are occasionally sold indiscriminately as citrate of iron.

The true citrate is very sparingly soluble, and is adapted for pills or powders. The *ammonio-citrate* dissolves with facility, and is a more elegant preparation, when taken in the form of a mixture.

The addition of a few drops of liquor ammoniæ to the citrate, confers solubility on it, by converting it into the ammonio-citrate.—*Pharmaceutical Journal*.

Medico-Chirurgical Review, Oct. 1842, p. 621.

31.—*On the External Application of Croton Oil.* By M. BOUCHARDAT. Whenever it is required to use this method of counter-irritation, M. Bouchardat strongly recommends a plaster which has been much used by M. Chomel at the Hôtel Dieu, and which is thus prepared: Four parts of diachylon-plaster are melted at a very gentle heat, and while it is half liquid, one part of croton oil is mixed with it, and the mixture is then spread in a thick layer on calico. Pieces cut from this may be applied to the skin like ordinary sticking-plaster, and quickly produce an active irritation.

British and Foreign Medical Review, July 1842, p. 329.

32.—*Small-pox before Birth.* By Dr. C. GNOLI. Rosa Galvani, 37 years old, a healthy woman who had been vaccinated successfully when an infant, was delivered of a male child on June 3, 1841. The labour was easy and the mother recovered without any bad symptoms, but the infant was an eight months' child; labour seemed to have been induced by the small-pox, with the pustules of which the child was covered. At birth the child was in a comatose state, from which it was relieved by allowing some blood to flow from the umbilical cord. On the second day the pustules appeared at their height, on the fifth day maturation began, but on the sixth a black spot

appeared in the centre of each pustule, and the child was attacked with febrile symptoms, subsultus, and trismus. On the seventh and eighth days this condition became aggravated, and the child died at 3 a. m. of the ninth day after birth.

When interrogated about her own health, the mother stated that about a week before delivery she felt generally ill, was feverish, lost her appetite, and suffered much from heat in the stomach, but not so severe as to make her seek for medical advice.

Ibid, p. 235.

[The extraordinary part of this case is, that no eruption appeared on the mother, who had been previously vaccinated. We have other instances of disease attacking the infant in utero, among which we may remind the reader of the case related by Mr. Walker, of Manchester, (Article 41, Retrospect, No. 1,) in which the eyes seemed to have been destroyed in the womb by an attack of purulent ophthalmia, which had run its course before birth; see also, Article 60, No. 3, for a similar case related by Mr. Crompton.]

33.—*Antidote to Corrosive Sublimate*. [M. Mialhe presented the following note to the French Academy of Medicine:—] It results from my experiments that the hydrated proto-sulphate of iron (a substance quite innocuous) possesses the property of instantly decomposing corrosive sublimate. The products of the decomposition are the proto-chloride of iron and the bisulphate of mercury, inert substances.

Provincial Med. and Surg. Journal, Aug. 27, 1842, p. 420.

[As no proofs whatever are adduced in the above note of the extraordinary efficacy of the hydrated proto-sulphate of iron, we must wait for further confirmation before relying upon it. The value of gold-leaf and iron-filings may be more depended upon. (See *Retrospect*, vol. v. p. 29.)]

34.—*Tannin, as an Antidote to Strychnia*. By Dr. LUDICKE. [In a case where strychnia had been incautiously taken by a patient to the amount of half a grain in six hours, and where the symptoms were becoming exceedingly dangerous, Dr. Ludicke ordered ice to be applied to the head, and half a grain of tannic acid to be given every hour, either in an effervescing draught or in distilled water. After twelve grains had

been taken, he substituted for it a decoction of two ounces of oak bark in six ounces of water, with an ounce of syrup of cinnamon and a scruple of sulphuric æther. The symptoms of poisoning entirely disappeared. Mesner, in Dresden, recommends as an antidote for strychnine, decoction of galls or of oak bark; five ounces of which precipitate two grains of nitrate of strychnine.]

British and Foreign Medical Review, July 1842, p. 229.

35.—*Extemporaneous Production of Milk.* By M. DICHOST. M. Dichost, a Russian chemist, proposed the following plan for the preservation and extemporaneous preparation of milk. He evaporates newly-drawn milk, at a very gentle heat, till it is all brought into a state of fine powder. It is then put into small glass bottles, which are completely filled and hermetically sealed, with ground glass stoppers. A small quantity of the powder thus obtained, dissolved in an appropriate quantity of water, affords on the instant a milk of very good quality. The powder will remain good for a great length of time.

Ibid, p. 229.

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36.—*On the Effects of Caloric applied to the Skin.* M. Gondret states that the flame of a burning match being instantaneously applied to the skin produces a sharp pain, which disappears as rapidly as it has been produced. This flame forms upon the skin a small reddish mark, which, after a few days, leaves no traces behind it. The instantaneous application of this flame almost always speedily dissipates a rheumatic, gouty, or any other kind of pain. He has also found this result in most kinds of chronic pains; and he further thinks that it might be advantageously employed in asphyxia, while waiting till more appropriate remedies could be adopted, he has in several instances more or less completely dissipated the pains and convulsive contractions of the *aura epileptica*, and prevented or considerably retarded the invasion of the epileptic fit by this means. The physiological effects of this agent have, he thinks, a great resemblance to those produced by electricity. On asphyxiating a rabbit by repeated shocks applied to the occiput, the flame of a match passed along the vertebral column quickly restored the animal to its natural condition. This result is

exactly similar to that which he had obtained, under similar circumstances, by galvanism as well as by cupping.

Medical Times, July 9, 1842, p. 229.

37.—*On the Proto-ioduret of Iron.* Dr. Dupasquier recommends the following formula for the preparation of the proto-ioduret of iron, which possesses this advantage, that it can be kept for an indefinite time without any extraneous mixture—that is, without the addition of any sugar or other conservative principle. The object is to keep the solution of the ioduret in constant contact with a great excess of iron. Take 50 grammes (2 ounces, 2 drachms, and 40 grains) of iodine, 100 grammes ($4\frac{1}{2}$ ounces and 4 scruples) of iron wire, and 400 grammes (rather more than a pint) of distilled water; cut the wire into pieces about an inch long, put them into an emery vessel, add the water and iodine, and stopper it. If some of the solution is required for immediate use, the bottle must be plunged, for about ten minutes, into water heated to 175° Fahrenheit, shaking it frequently during the time. The quantity of the solution required must be filtered afterwards, when the liquid will pass colourless. If it be not wanted immediately, it should be set aside, and the combination of the iron and iodine will take place without the necessity for heat. The solution can be kept for any length of time, for as fast as one portion of the iron, dissolved by the iodine, becomes oxydized by the oxygen of the air, and is precipitated in the state of hydrate of sesquioxyde, the portion of iodine thus set at liberty re-acts on the iron wire, and forms a fresh proto-ioduret, to replace that which has been decomposed. The decomposing action of the oxygen of the air is then constantly neutralised by the recomposing action caused by the incessant contact of the metal.—*Bulletin de Thérapeutique.*

Provincial Medical and Surgical Journal, May 7, 1842, p. 99.

38.—*Assafætida in Hooping Cough.* Dr. Rieken has derived more advantage from the use of assafætida than from any other remedy in three epidemics of hooping-cough. It is indicated only after the febrile period has passed, and its influence is diminished in the third stage, when tonics should be combined with it. As assafætida is a medicine which it would be very difficult to induce children to take by the mouth, Dr. Riekin prescribes

it in enemata—he orders three grains of the gum resin to be rubbed up with a sufficient quantity of yolk of egg, and mixed with 125 to 250 scruples of water. This mixture will suffice for ten or twelve lavements for children under a year old; for from four to six, for children three years old; and for two or three only, for those that are older. For the first five or six days, two enemata are given daily, sometimes more; after that, one at night will be sufficient. If diarrhœa should come on, it may be stopped by increasing the quantity of the yolk, and by adding starch or gum arabic; olive oil should be added if tenesmus should supervene. The use of the assafœtida is very well borne by children of a strong constitution, and still better by those that are nervous or lymphatic.—*Annales de la Soc. Méd. de Bruxelles.*

Ibid, Sept. 3, 1842, p. 448.

39.—*Effects of Acetate of Lead in large doses.* By ALEXANDER LANE, M.D., S.R.N. Some time ago a patient of mine labouring under phthisis confirmata, was attacked with hæmoptysis. The remedies recommended in such cases were resorted to without relief; as a final measure I had recourse to the acetate of lead, and administered it in the usual doses, but without producing the desired effect. The powerful astringent nature of this medicine tempted me to hazard what I then considered a large dose, without opium, more particularly as the quantities I had already given did not appear to have had any direct effect upon the system. I therefore gave five grains and waited the result with anxiety; four hours passed away without any untoward symptom, and the disposition to hæmorrhage seemed less. I then repeated the dose, and waited four hours more with less anxiety, after which I again repeated the dose—thus making fifteen grains in eight hours, without producing any other effect than that of arresting the disease. This patient eventually died from phthisis, but the hæmoptysis did not again return during life. The result of this case led me to doubt the poisonous nature of this drug, at least in moderate doses, and an opportunity soon offered itself to me of testing, whether in reality it was as dangerous as it was generally supposed to be. A lady labouring under menorrhagia applied to me; the complaint had been of some standing, and had resisted all medical treatment. I commenced the acetate of lead in doses of ten

grains every four hours, removing the disease on the evening of the seventh day, without giving any inconvenience to my patient.—This lady had also a disposition to tubercular phthisis, which has since disappeared, and this has led me suspect that this medicine may possess some influence over disease of the lungs prior to the commencement of the suppurative process. I am now giving this medicine in a very aggravated case of menorrhagia in doses of ten grains every ten hours, and with a very fair prospect of ultimate recovery, notwithstanding the digestive organs having suffered so considerably from one year's continued drenching and quackery. I am of opinion that a drachm, or even two of this medicine might be given with perfect safety in desperate cases—and I am in the hope that when its full power shall become known to the medical world, its use will become more general in those fatal diseases. I have no doubt of its power in arresting hæmorrhage, more particularly from the lungs and uterus, and as for the stomach, its effects should be instantaneous.

Dublin Medical Press, June 29, 1842. p. 406.

[In an interesting paper on this subject see Retrospect V., Article 30.]

40.—*Ergot of Rye in Paraplegia.* By M. PAYAN. In an essay on this subject, M. Payan commences by stating that we should not consider the ergot of rye as an excitor of uterine contractions only, many facts showing that it acts also on the rectum, the bladder, and the lower extremities, when these parts are in an asthenic condition, in the same manner as it affects the uterus in inertia of that organ. And as we cannot reasonably attribute to this agent similar specific effects on parts so essentially different, we must refer its action to some other organ on which these different parts are dependent. M. Payan, therefore, considers that the ergot of rye acts primarily and especially on the spinal cord.

This being granted, it follows that we may rationally have recourse to the employment of ergot of rye in paraplegia, and cases of weakness of the lower extremities, depending on defective action of the spinal cord, without alteration in its structure. M. Payan adds the three following facts in proof of the justice of his observations. A man, 40 years old, fell on his perineum,

and paraplegia followed. He recovered entirely under treatment at Marseilles; and subsequently meeting with a similar accident at Aix, was admitted into the hospital of that place. In the absence of M. Payan various remedies were employed to remove the paraplegia, as liniments, blisters, &c. but without success. On the return of M. Payan, these measures were substituted by the ergot of rye, given to the extent of a drachm. Two hours afterwards the muscles began to agitate the limb, and he recovered a certain degree of power every day. At the end of six days the patient could walk with the assistance of a stick. During a fortnight the ergot was administered in two-drachm doses; the treatment was then suspended on account of some gastric irritation, but the amelioration continued, and in a month the patient left the hospital.

A man, aged 30 years, was submitted to the care of M. Payan, with paraplegia. Various active remedies had been employed without success. The inferior extremities were able to bear the weight of the body, but if he attempted to walk many steps they gave way under him. The right leg was insensible, the left partially atrophied. The bladder had lost its power of contraction. A drachm of the ergot was administered each morning; after a few days the dose was increased to two drachms. At the same time friction on the spine and lower extremities with an irritating liniment was employed. After eighteen days both the lower limbs had become so far recovered, that the patient was enabled to return to his home.

A labourer was suffering under very advanced paraplegia as the result of a severe saturnine affection. Various remedies had been unsuccessfully employed to combat the disease. The ergot of rye effected a complete cure.

From these three cases M. Payan infers not only the efficacy, but also the entire innocence of this remedy, which he has in many instances employed in large and long-continued doses without any ill effect.—*Journal de Pharmacie*.

Medical Gazette, July 22, 1842, p. 654.

41.—*On Tinea.* Formulæ used in the treatment of tinea capitis.—The following are the formulæ commonly employed by M. Casenave in the treatment of this disease, at the Hospital of St. Louis:—*Ioduret of sulphur ointment.*—Ioduret of Sulphur, 1 scruple; Lard, 30 scruples. *Depilatory ointment*—

Subcarbonate of Soda, 8 scruples ; Lime, 4 scruples ; Lard, 30 scruples. Pitch Ointment—Citrine ointment, 15 scruples ; Pitch ointment, 30 scruples ; or, powdered Pepper, 2 to 4 scruples ; Lard, 30 scruples. The ointment is applied every evening ; in the morning the head is washed with the following lotion :—Subcarbonate of Potash, 8 scruples ; distilled water, 500 scruples.

Medical Times, April 23, 1842, p. 61.

42.—*On a very simple means of arresting Epistaxis.* By Dr. NEGRIER, of Angers. This consists in nothing more than closing with the opposite hand the nostril from which the blood flows, while the arm of the same side is raised perpendicularly above the head. In every instance in which he has had recourse to this means during the past three years M. Négrier has always found that it suspended the hæmorrhage : a fact of which he offers the following explanation :

When a person stands in the ordinary posture, with his arms hanging down, the force needed to propel the blood through his upper extremities is about half that which would be required if his arms were raised perpendicularly above his head. But since the force which sends the blood through the carotid arteries is the same as that which causes it to circulate through the brachial arteries, and there is nothing in the mere position of the arms above the head to stimulate the heart to increased action, it is evident that a less vigorous circulation through the carotids must result from the increased force required to carry on the circulation through the upper extremities.

British and Foreign Medical Review, Oct. 1842, p. 550.

43.—*On the use of Quinine in Children.* By M. TROUSSEAU. In a lecture delivered by him at the Hôpital Necker, M. Trousseau made some observations on the difficulty of administering the sulphate of quinine to children, owing to its nauseously-bitter taste. In reference to this he recommends the impure quinine (*quinine brute*), which is more active than the sulphate of quinine, is insoluble in the saliva, and has not much taste. One hundred parts of it contain sixty-five of pure quinine, thirty of cinchonine, and only five of water ; while in one hundred parts of the sulphate of quinine there are thirty of water. This preparation is soluble in lactic acid, and is

quickly changed into soluble salts in the stomach by the acids which exists in that viscus. Its resinous consistence is another advantage, since it admits of its being rolled into pills; in which form it may be mixed with sago, or given in any vehicle which contains no acids, since they would at once convert it into bitter and insoluble salts.

Ibid, p. 560.

45.—*On the Crowing Respiration.* By Dr. MARSHALL HALL, F.R.S., &c. [In the *Lancet* for April 17, 1841, was published an interesting paper on this subject, which is named by some writers "*thymic asthma*," by others *laryngismus stridulus*. In the above paper it is related that several children of the same family were attacked by the same disease and died. In one instance it was supposed to be owing to an enlarged state of the thymus gland. The parents of course felt exceedingly anxious when the next child, about five months old, was attacked with whooping-cough, which was dreaded as the forerunner of the fatal malady which had before deprived them of their progeny. At first, however, no crowing affection occurred. "The sound of the cough though somewhat similar, differed to a practised ear from the sound emitted by the other complaint. The whoop too in this case only came as it usually does with the cough. The crowing noise had in all former cases come on without a cough occurring, either when the child awoke from sleep, or when it was irritated or frightened, or agitated in any way." The child seemed to recover from the whooping-cough, and in time cut two teeth, but the prevalence of easterly winds in March and April brought back the whooping-cough, and with it came the dreaded crowing, which was first observed when the child awoke from sleep, about April 12th.

"The constant recurrence of the crowing without any cough accompanying it, the struggle for breath, the blue appearance of the face, the distention of the veins of the head, and the occurrence of the same kind of spasms which had marked the complaint in the other children, all seemed to convince the parents that whatever the cause might be, there was, independently of the whooping-cough, the same complaint which they had watched with so much anxiety and pain in the former case."

Mr. Mimpriss began to treat the case as the others had been treated, with calomel, iodine ointment to the region of the

thymus gland, leeches to the temple, &c. But this failed in procuring relief, and when Dr. Marshall Hall was called in, he recommended "that the gums should be freely lanced all round twice a day, without any reference to whether teeth were coming through or not; that the child should be kept clothed in flannel from the neck to the wrists and ankles; that the head should be kept constantly cool with a lotion (one part of spirit of wine to seven of water), and the feet kept warm by fomentations; that a cloth wetted with the same lotion as that used to the head should be applied to the neck over the thymus gland; that three grains of potass should be given three times a day, and one grain of calomel in five grains of rhubarb every night;" that a healthy wet-nurse should be procured, and every precaution adopted to protect the child from cold winds. This treatment was persevered in for some time, the gums were then lanced less frequently; the symptoms were surprisingly alleviated, the crowing and spasms continued to occur for a few days, and then entirely ceased.

This treatment would seem to show that the complaint is owing more to teething and to the stomach and bowels, than to any enlargement of the thymus gland, although no doubt in many cases that organ may be happen to be enlarged. Dr. Marshall Hall makes the following remarks on the too much neglected operation of lancing the gums in children :]

I have long regarded the process of dentition as not very dissimilar from a state of *sub*-inflammation. I have therefore prescribed the gum-lancet, not only in cases of actual dentition, but in cases in which I did not immediately expect the eruption of teeth through the gums, and even in cases in which *all* the teeth had already appeared. From the same motive I have prescribed scarification of the gums within and without the highest and lowest border of the gums, or the lines along which the teeth make their appearance.

I have prescribed the use of this remedy, in a word, to correct a state of the blood-vessels and nerves, which, though physiological, borders on a pathological character. I have prescribed it to be used daily. I have been satisfied with nothing short of the subjugation of the excessive action and fulness of the vessels, and of the disappearance of morbid actions, chiefly of a nervous character, in distant parts.

I have thought it right to continue the remedy, even when these effects have been produced, knowing, by painful experience, how apt they are to recur. I have considered that an infant had better have its gum lanced a thousand times unnecessarily even, than be subjected to *one* convulsive attack. I have compared the *operation* on the *gum* with the *morbid effect* of a convulsion on the *brain*.

My prescription has been met by opposition, but by no argument; by forebodings of terrible ulceration, and even mortification of the gums, but by no such occurrence.

In one word, I believe we have still to learn the measure and extent of the advantages to be derived from the full, free, and daily scarification of the gums during the process of dentition.

Lancet, July 9, 1842, p. 506.

[Sir Henry Marsh, in the Dublin Hospital Reports, (vol. v. p. 610), speaking of a patient attacked with this affection, says, that on his being removed into the country the symptoms ceased immediately, and the child completely recovered; but on being brought back to a large and newly-painted house in the city, the spasmodic attack recurred violently, and again ceased on a removal into the country. And it is a curious fact, that two other children were attacked with a similar spasmodic affection on being brought into this newly-painted house; of these, one died in a convulsion, and the other recovered on being sent into the country.

In all such cases it is highly necessary to avoid exciting *mental emotion*, whether by using the child violently, alarming it suddenly, or awaking it suddenly out of sleep. If a nurse be frequently out of temper, she will not only use the child roughly, but the milk is found to be thereby rendered unwholesome. A change of nurse is, therefore, often advisable.

In a case described by Dr. Henderson, the greatest advantage was derived from rubbing the spine with opium liniment and croton oil, so as to bring out a copious rash all over the parts.— (See *Lancet*, Aug. 27, 1842, p. 749.)]

SURGERY.

45.—ON DISEASES OF THE URINARY ORGANS.

By Sir B. BRODIE, Bart., F.R.S., Sergeant Surgeon to the Queen, &c. &c.

[The reader will find a very excellent review of Sir B. Brodie's work on "Diseases of the Urinary Organs," in several of the periodicals. We prefer that in the Med.-Chir. Review, and take the liberty of drawing largely from its pages. The entire profession will cordially agree with the following sentiments of the Editor's:—

"Sir Benjamin Brodie's contributions to the literature of surgery are so eminently practical, and so valuable to those who prefer facts to theories, that we have never neglected an opportunity of laying them before our readers. And we would take this opportunity of observing, that works of this description should be brought prominently forward, and held up as models to young medical men. The taste of the day would seem to be inclining too much towards compilations, learned, no doubt, and laborious, but adapted for the closet, rather than the field of practice, and better calculated to make men talk than act. In the literary productions of Sir Benjamin Brodie we find a totally different spirit. They contain the knowledge which is taken from the bedside, and can again be taken to it. There is no parade of quotations, no innumerable references to the opinions of others, no transcendental speculations, no ingenious and unsubstantial disquisitions, no extravagant views, no hunting after what is merely new, nor bigotted adhesion to what is merely old, no disposition, in fact, to deviate from that straight path of moderation and of common sense, which leads in the applied sciences, as in the common business of life, to the most successful and solid results."]

Stricture of the Male Urethra.—Sir Benjamin thus describes the ordinary course of the affection. The patient.

he says, complains of more than usual difficulty in voiding his urine; but the difficulty does not amount, at least in the first instance, to an absolute retention. Perhaps he has a shivering. There is a sense of fulness in the perinæum, and some degree of deep-seated induration is perceptible in one part. This gradually increases, and a tumor presents itself under the skin of the perinæum, surrounded with more or less of œdematous effusion, especially into the scrotum. The skin becomes inflamed, and the fluctuation of fluid is perceptible underneath. An abscess bursts, or is opened with a lancet, and a considerable quantity of putrid pus is discharged. Here the œdema of the neighbouring part subsides. Pus continues to flow through the orifice of the abscess, and after some time it is observed that urine flows through it also. The discharge of pus diminishes, but the urine flows in larger quantity; and whenever the patient makes water, part escapes through the natural channel and part by the new opening. The abscess has evidently a communication with the urethra, behind the stricture. If you have an opportunity of dissecting the diseased parts while the abscess is recent, you find it to open into the urethra by a ragged irregular orifice. If you examine them at a later period, the orifice in the urethra is found to be smooth, regular, and rounded at the margin; the external orifice in the perinæum is reduced to a narrow diameter, and is seen in the centre of a button-like projection of the skin: and the abscess itself is contracted, perhaps reduced to a narrow passage, with a smooth surface, which presents somewhat of the appearance of it being lined by a mucous membrane. We now say that the case is one of *fistula in perinæo*. The whole of these phenomena are easily explained. The urethra, constantly teased by the pressure of the urine against it, ulcerates behind the stricture. If the stricture had been completely closed, as in a case of retention of urine, an extensive extravasation of urine would have immediately taken place; but under the existing circumstances this does not happen, and only a moderate quantity, perhaps not more than a few drops, dribbles into the cellular membrane, sufficient to induce inflammation and suppuration and no further local mischief. A *fistula in ano* is formed in the same manner, by ulceration of the rectum allowing the escape of a minute quantity of feculent matter into the neighbouring textures.

Sir Benjamin goes on to remark, that sometimes the abscess in the perinæum is accompanied by typhoid symptoms. If the abscess is opened, the matter that issues is putrid and urinous—if the opening is deferred the patient may die.

“I have described,” continues our author, “the simplest form of the urinary abscess. But it is often more complicated. It is not always confined to the perinæum, sometimes it makes its way forward through the upper part of the scrotum, and presents itself on the lower part of the penis, between the scrotum and the glans. At other times it burrows in the opposite direction, forming a large collection of matter in the nates, or it may burst in the groin, or in the scrotum. In one case, in which I had the opportunity of examining the body after death, I found a large abscess in front of the pubes, extending half-way towards the naval; another among the adductor muscles of the left thigh; and a third among the muscles at the upper part of the right thigh, as far outwards as the *foramen ovale* of the ischium; the periosteum having been destroyed, and the bone itself rendered carious to a considerable extent: and all these abscesses could be traced into an abscess in the perinæum, communicating with the urethra behind a stricture by a small orifice. In another case which I attended with Mr. Samuel Cooper, there was a *fistula in perinæo*, communicating with a large abscess of the pelvis on one side of the bladder.

I have seen a few cases in which an abscess of this kind had made its way into the rectum, forming a fistulous communication, between it and the urethra. If such communication be of a large size it is a source of great distress, as fæculent matter occasionally passes through it from the rectum into the urethra. If it be small, however, the absolute inconvenience is but trifling, and the patient is rendered sensible of its existence only in consequence of a small quantity of air escaping occasionally by the urethra; and this may continue, without any further symptoms supervening, for many years.”

Introduction of the Bougie.—We are tempted to introduce Sir Benjamin’s directions for the introduction of the bougie. “The best kind of bougie,” he observes, “is that in common use, made of plaster spread on linen, and rolled up. It should be smooth on the surface, and neatly rounded at the extremity. The plaster bougie should be rubbed until it becomes warm, so

that it may be moulded by the hand, and bent into the form of the urethra. Thus bent, it is much to be preferred to the elastic bougie, which is made of elastic gum on the outside and of catgut within. The latter may, it is true, be bent into any form: but it is elastic, and however you may bend it, it always regains its straight figure; and hence it is not well constructed for being passed along the curved canal of the urethra. The bougie which is used for the purpose of examining the urethra should be of a full size, that is, large enough to fill the urethra without stretching it. A small bougie may deceive you in two ways: it may pass through a stricture, and thus lead you to believe that there is no stricture, when there really is one; or it may have its point entangled in the orifice of one of the mucous follicles of the urethra, or in some accidental irregularity of the canal, and lead you into the opposite mistake of supposing that there is a stricture where none exists. If you use a bougie of the size of the urethra you are not at all liable to the first error, and you are much less liable to the second than you would be otherwise. The bougie should be cylindrical. There is no advantage in any bougie, except a very small one, being conical. A conical bougie becoming larger towards the point which is held in the hand, is likely to extend forcibly the orifice of the urethra, and to excite inflammation in it.

The existence of stricture in the anterior part of the urethra, or at its orifice, is so easily ascertained that it seems unnecessary to offer any observations on the subject. The following rules, then, are to be considered as relating especially to those cases in which it is a question whether there be or be not a stricture in the membranous part of the urethra, or in its immediate vicinity.

I generally find it best to introduce the bougie with the patient in the erect posture, keeping the extremity of it, which I hold in my right hand, close to his groin, and passing it until it will go no further in that direction; after which, by turning the instrument, I bring it horizontally forwards, and push it gently towards the bladder. If the patient has well-marked symptoms of stricture, and the bougie meets with an obstruction in some part of the urethra, you may be justified in considering this as sufficient to indicate the existence and situation of the disease. If, however, the patient has no such well-marked symptoms, you should not advance at once to the conclusion

that there is a stricture because the bougie does not immediately enter the bladder. The extremity even of a large bougie may hitch in some irregularity of the mucous membrane; or if you are at all rough in the use of it, a spasm may be induced in the membranous part of the urethra, or in the muscle which surrounds it, preventing the bougie from being passed, although no such cause of obstruction exists at other times. Under these circumstances you should introduce a silver catheter, or what is better, a metallic sound, having a moderate curvature, and warmed to the temperature of the body; and it is probable that, if there be no stricture, the metallic instrument will be easily introduced, although the plaster bougie could not be introduced at all. In short, where there are no decided symptoms of stricture you ought not to adopt the opinion that a stricture exists without having made a very careful examination of the urethra. Inattention to this rule has led to many patients being subjected to a course of treatment for stricture who had never laboured under the disease."

Treatment of Retention from Spasmodic Stricture—Sir Benjamin recommends the immediate and direct recourse to mechanical means.

"Begin," he says, "by taking one of the smallest gum catheters, which has been kept for a considerable time on a curved iron wire, and which retains the curved form after the wire is withdrawn. Introduce it without the wire; and as it approaches the stricture, turn the concavity of the catheter towards the pubes, elongating the penis at the same time by drawing it out as much as possible. It is not very improbable that it will pass through the stricture, and enter the bladder. The urine will then flow through it in a fine stream, and the patient will obtain immediate and complete relief.

If you fail with the small gum catheter, try, not a plaster, but a small catgut bougie. Let this be well made; that is, firmly twisted, nicely rounded at the extremity, and every where well polished. Observe the same rule of elongating the urethra, and it will probably enter the stricture. It is not necessary that the catgut bougie should pass on to the bladder; it is sufficient if the stricture grasps, or holds it. Let it remain in the stricture until there is a violent impulse to make water. Then withdraw the bougie, and the urine will follow it in a small stream. If the patient empties the bladder, the object is attained; but,

otherwise, re-introduce the catgut bougie, or rather introduce another of the same size (for a catgut bougie which has been once used is not fit to be employed a second time); and let the patient retain this second bougie as long as he can. If the straight catgut bougie cannot be passed, you will often succeed in effecting its introduction by bending the point of it. This contrivance enables you to keep the point sliding against the upper surface of the urethra, avoiding the lower part, in which the obstruction is always most perceptible, and in which the bougie is most likely to become, as it were, entangled.

Even where you have failed to relieve the patient by means of the catgut bougie, you will often succeed in introducing a silver catheter, or an elastic gum catheter mounted on a firm iron stilet, into the bladder. The catheter employed on this occasion, if the stricture be of recent formation, should be nearly of the full size of the urethra; but if the stricture has been of long duration, it should be considerably smaller. The common silver catheter is not so well adapted for the purpose as that which I now show you. You will observe that it is shorter and less curved than usual; and that it is fixed in a wooden handle, which renders the instrument more manageable than it would be otherwise. If you use an elastic gum catheter, the iron stilet should have a flattened handle, resembling that of a common sound. You should pass it as far as the obstruction, and having ascertained where it is situated, withdraw the catheter a little, a quarter of an inch for example, and then, as you pass it on again towards the bladder, keep the point sliding against the upper part of the urethra, which is towards the pubes, avoiding the lower part, which is, of course, towards the perinæum. Be careful to employ no violence. If you lacerate the urethra, so as to cause hæmorrhage, you will be defeated in your object. Press the catheter firmly, but gently and steadily, against the stricture, keeping in your mind the anatomical position of the parts, and being careful to give the point of the instrument a right direction. When the pressure has been thus carefully continued for some time, the stricture will begin to relax. It will allow the point of the catheter to enter, and, at last, to pass completely through it into the bladder. In some instances this will be accomplished in the space of one or two minutes; while in others it may be necessary to persevere for a quarter of an hour. As soon as the catheter has

reached the bladder, the patient's sufferings are at an end, as the bladder becomes completely emptied. If you have used the elastic gum catheter, it may be prudent to allow it to remain in the urethra and bladder for one or two days, or even for a longer period; and this will go far towards accomplishing the cure of the stricture.

If you are skilful and prudent in the management of the catheter, you will generally succeed in introducing it into the bladder; but if you fail in doing so, the attempt to introduce it may still be useful to the patient. The pressure of the catheter against the stricture, if kept up for a considerable time, exhausts the morbid irritability of this diseased portion of the urethra. The spasm becomes in a considerable degree relaxed, and if you withdraw the instrument when the patient has a violent impulse to make water, the urine will follow in a stream. Observe, that I am taking it for granted that you are careful to avoid all violence. If the membrane of the urethra be lacerated, the probability is, that the spasm will not give way; and if, under these circumstances, you persevere in the attempt to introduce the catheter, you will but aggravate the evil which it is your object to remove.

The remedy on which you are most to rely, where these mechanical means fail, is opium. From half a drachm to a drachm of laudanum may be given as a clyster in two or three ounces of thin starch. If this should not succeed, give opium by the mouth, and repeat the dose, if necessary, every hour until the patient can make water. According to my experience, the cases in which the stricture does not become relaxed under the use of opium, if administered freely, are very rare. The first effect of the opium, is to diminish the distress which the patient experiences from the distention of the bladder. Then the impulse to make water becomes less urgent; the paroxysms of straining are less severe and less frequent; and after the patient has been in this state of comparative ease for a short time, he begins to void his urine, at first in small, but afterwards in larger quantities.

It is customary in these cases to employ the warm bath. It is, indeed, sometimes useful, but you can place no dependence on it as compared with opium. It is not sufficient that your patient should sit in a hip-bath: the bath, to be at all efficient, must be complete; his whole person ought, therefore, to be

immersed, and he should remain in it for half an hour, or an hour, or longer, unless he previously becomes faint. Bleeding from the arm is seldom required in cases of retention of urine from stricture; but in some instances, even where other means have failed, taking blood from the perinæum by cupping gives immediate relief.

Purgatives require some time to produce their effect, and in most cases, at the period of your being called in, the symptoms are too urgent to admit of this delay. Where, however, a stricture is chiefly spasmodic, and the retention follows the too great use of fermented liquor or spirits, I would advise you, if you are sent for on the commencement of the attack, to prescribe a draught of infusion of senna with the tartrate of potass and tincture of jalap. As soon as this has fully operated, and the bowels are emptied, give thirty or forty drops of tincture of opium by the mouth, or order an opiate clyster to be administered, and, in all probability, the attack will subside.

After all, there is no absolute rule as to the treatment of retention of urine from stricture. One person is relieved in one way, another in another; and you will do well in each case to bear in mind the particular mode of treatment which has proved of service, in order that you may at once resort to it, if you are called a second time to the same patient, under the same circumstances. In one instance, you will be able to pass a catgut bougie, and not a catheter; in another you will be able to pass a catheter, and not a catgut bougie. One individual is relieved by opium, another by the warm bath. A gentleman of my acquaintance, who was subject to attacks of this description for a considerable time, almost always began to make water after a pint of warm water had been thrown up as a clyster. To show what various treatment is necessary, I have been in the habit of mentioning the following case. A gentleman who had been long in hot climates, laboured under an old stricture of the urethra. He was able to pass a bougie for himself; and he did this at regular periods, and for a long time experienced little or no inconvenience from his disorder. One night however, he was seized with retention of urine, and called me out of my bed in consequence. I introduced a gum catheter, which entered the bladder with perfect ease, and drew off the urine. He called me up another night, and another, and another still; and one night he called me up twice. At last, it oc-

curred to me that he always sent for me on the alternate nights ; and on enquiry, I found that the attack of retention regularly came on about twelve o'clock, and even though the catheter had entered the bladder, the spasm did not relax, so as to enable him to make water by his own efforts, until five or six in the morning. I determined then to treat the case as we do other intermitting and periodical diseases ; and I prescribed him the sulphate of quinine. The first night after he began to take it he had an attack of retention ; but he had no attack afterwards."

When an operation becomes indispensable, which Sir Benjamin thinks it must *rarely* be, he is of opinion that puncturing the bladder from the rectum is applicable to the greatest number of cases. But those who operate frequently must often operate unnecessarily.

Treatment of Stricture in the Anterior part of the Urethra.
—Sir Benjamin observes that a *stricture at the orifice of the urethra* may be dilated by means of a common bougie, or a short metallic instrument ; the size of the bougie being gradually increased, and the introduction being repeated daily or on the alternate days according to circumstances. The process of dilatation is however, in many instances, attended with much inconvenience to the patient. In those cases, especially, in which the contraction began in early life, every introduction of the bougie causes considerable pain ; at the same time that the disposition to contract is so great that the operation requires to be repeated almost daily. The consequence is, that the part is kept in a constant state of inflammation, and, between the disease and the remedy, is a source of incessant annoyance to the patient. In a case of this sort, which was extremely troublesome, Sir Benjamin determined at once to divide the contracted part of the urethra. This was easily accomplished by means of a pair of knife-edged scissors, one blade with a blunt point being introduced into the urethra, and the division being made in the situation of the frænum. No hæmorrhage followed the operation. A piece of lint was kept between the cut surfaces to prevent their re-union, and in about ten days they were cicatrized, being covered by what had already assumed a good deal of the appearance of a mucous membrane.

Strictures in the anterior part of the urethra, but behind the orifice, require to be mechanically dilated, by the introduction of

bougies or metallic instruments. Sometimes the patient obtains relief on very easy terms, the dilatation being readily accomplished, and the use of the bougie once in three or four days being sufficient to prevent a recurrence of the contraction. At other times, however, the disposition to contract is so great, that it becomes necessary to introduce the bougie once or twice daily; and indeed, Sir Benjamin has known cases in which the patient was seldom able to expel his urine until the bougie had been employed.

After speaking of the *common wax bougie*, which Sir B. Brodie thinks the preferable instrument where it can be used, he observes that he does not employ the common flexible metallic bougies, as they are liable to lose the shape which you have given them during their introduction, and, in fact, are at the same time too flexible and too inflexible for any useful purpose. Sir Benjamin's bougies, if of a small or middle size, are made of solid silver; the larger ones of silver or steel, or steel plated, or of a composition similar to, but firmer than, that of the flexible metallic bougie. These sounds should be very slightly curved, and for ordinary cases not more than eight inches and a-half or nine inches long, exclusive of the handle. You may use them as you would use the common bougie for the purpose of gradually dilating the stricture, beginning with one of a small size, and gradually proceeding to those which are larger. These metallic instruments are applicable: 1st, to cases of old and indurated strictures, which the common bougie is incapable of dilating; 2dly, to those in which, in consequence of some improper management, a false passage has been formed, into which the point of a common bougie will easily penetrate, but which an inflexible instrument may be made to avoid; 3rdly, to those in which, from long-continued disease, and without any previous mismanagement, the urethra has become distorted, and its surface irregular; and 4thly, to several recent cases in which the smooth polished metallic surface gives less pain to the urethra, and is less likely to induce spasm, than the softer but less smooth surface of the common bougie.

In very old and inveterate cases, where other means have failed, a full-sized instrument will often succeed. "The sound should be rather above than below the middle size. Of course the same rule in this respect does not apply in every instance, but

that which I generally find it most convenient to employ has only a moderate curvature. It is made of silver, fixed in a flat wooden handle, being nine inches in length from the handle to the point; no part of it is more than one-fifth part of an inch in diameter, and at the point the diameter is reduced to one-sixth of an inch.

In using the sound you should pass it carefully as far as the stricture, and then press the point firmly and steadily against it, taking care that it is directed in the line of the urethra towards the bladder. The pressure is to be continued for five, ten, or fifteen minutes, or even longer, according to circumstances; and this process is to be repeated once in two or three days. If a false passage exists, it is probably on the lower part of the urethra towards the perinæum; and it is in this situation that, by careless management, one may be easily made. To avoid this mischief, you must direct the point of the sound especially to the upper part of the stricture next the pubes. The pressure should be as much as can be made without the urethra being lacerated, and without inducing any considerable degree of pain. In some instances the stricture has little or no sensibility, in others it is exquisitely tender; and in the latter cases the pressure should be very trifling at first, but it may be gradually increased as the tenderness subsides (as it will do) under its influence.

The result of this treatment is, that at each operation the anterior part of the stricture seems to become relaxed to a greater or less extent; and that at last the instrument penetrates entirely through it and enters the bladder. The period at which this happens, of course, varies in different cases. The permanent change of structure may be trifling, the stricture being chiefly spasmodic, and one or two applications of the sound may be sufficient. There may be much gristly induration, occupying a considerable portion of the urethra, and many applications may be required. A patient was under my care, in whom the stricture was surrounded by a mass of hard substance, which could be distinctly felt in the perinæum, apparently an inch or an inch and a half in length. The stream of urine was of the smallest size, and varied so little that it was evident that there was little or no liability to spasms. For many years before I was consulted no instrument had been made to enter the bladder; and the ordinary methods, after a

long trial, failed in my hands, as they had done in those of others. At last I succeeded by the method which I have just described, but not until I had persevered in it for many months.

After describing the method of treating stricture by means of the *gum catheter*, which is left in the urethra, Sir Benjamin points out the cases to which he believes it to be applicable. They are, 1st, Where time is of much value, and it is of great consequence to the patient to obtain a cure as soon as possible.

2dly, Where a stricture is gristly and cartilaginous, and therefore not readily dilated by ordinary methods.

3rdly, Where, from the long-continuance of the disease, the urethra has become irregular in shape, or where a false passage has been made by previous mismanagement. Under these circumstances, if you can succeed in introducing a gum catheter, and let it remain for a few days in the bladder, you will find your difficulties at an end; the irregularities will disappear, and the false passages will heal.

4thly, Where a severe rigor follows each introduction of the bougie. This disposition to rigor is such, that it is sometimes impossible to proceed with the treatment in the ordinary way. Observe, in these cases, when the rigor takes place. It seldom follows the use of the bougie immediately. It almost always occurs soon after the patient has voided his urine, and seems to arise, not as the immediate effect of the operation, but in consequence of the urine flowing through the part which the bougie has dilated. Now, if, instead of a bougie, you use a gum catheter, and allow it to remain, the urine flowing through the catheter, the contact of it with the urethra is prevented, and the rigor is prevented also.

Sir Benjamin conceives that the *caustic bougie* is applicable to the following cases: 1st, Those of spasmodic stricture, where two or three applications of the caustic may be sufficient to relieve all the urgent symptoms. 2ndly, Some cases of old stricture, in which there is still a considerable disposition to spasm. In these last cases apply the caustic two or three times, and no oftener. It will probably relieve the contraction as far as it is spasmodic, and thus enable you to proceed more advantageously, with the use of the bougie or metallic sound. 3dly, The caustic may be used very properly in some cases of stricture which are endowed with peculiar irritability, in which

every application of the common bougie induces severe pain, or brings on spasm, preventing it entering the stricture. Two or three applications of the caustic may be sufficient to deprive the stricture of that unnatural sensibility which otherwise would have foiled your efforts to effect a cure. Yet our author seldom employs caustic for these reasons: 1st, Although the caustic often relieves spasm, it also very often induces it. It is true, that in many instances it enables a patient to make water with more facility; but in many instances, also, it brings on a retention of urine. 2dly, Hæmorrhage is a more frequent consequence of the use of the caustic than of the common bougie, and it sometimes takes place to a very great and to an almost dangerous extent. 3dly, Where there is a disposition to rigors, the application of caustic is almost certain to produce them; and frequently the application of caustic induces rigors where there had been no manifest disposition to them previously. 4thly, Unless used with caution, the application of caustic may induce inflammation of the parts situated behind the stricture, terminating in the formation of abscess.

Division of Stricture.—Sir Benjamin remarks of Mr. Stafford's method for dividing strictures that there are very few cases for which it can be needed. But he relates an instance in which he adopted a modification of it with success.

Case.—"A man, forty years of age, was admitted into St. George's Hospital, in the year 1835, labouring under a stricture, near the bulb of the urethra, complicated with a fistulous opening in the perinæum. When he voided his urine, a very small quantity came away by the urethra, the greater part being discharged by the perinæum. The disease had existed for more than twenty years, and the abscess in which the fistula had originated had followed an injury received while riding on horseback thirteen years ago. For many years no instrument had been passed through the stricture. At last he became a patient under the late Mr. Earle, in St. Bartholomew's Hospital, where he remained under treatment for five months, but with no more success than formerly.

Finding after repeated trials that no instrument could be made to penetrate through the stricture, with the concurrence of my colleagues, I performed the following operations:—

The patient having been placed in the same position as in

lithotomy, a full-sized plaster bougie was introduced, and held by an assistant with its extremity resting against the stricture. I then made an incision in the perinæum, dilating the fistulous sinus, and laying open the membranous part of the urethra as far forward as the stricture, the exact situation of which was marked by the bougie. The bougie was then withdrawn, and an instrument was introduced in its place, consisting of a straight silver tube, closed at its extremity, except a narrow slit, through which a small lancet could be made to project by pressing on a stilet which projected the handle of the instrument. The round extremity of the tube being pressed against the anterior part of the stricture, I applied the fore-finger of the left hand, introduced through the wound in the perinæum and urethra, to its posterior surface. The pressure of the instrument being distinctly communicated to the finger through the substance of the stricture, the lancet was protruded, and the stricture was divided. A silver catheter was then easily introduced through the urethra and the divided stricture into the bladder, and allowed to remain there. The urine of course flowed through the catheter. At the end of two days the silver catheter was removed, and replaced by one of elastic gum. The wound in the perinæum gradually healed, and the patient ultimately recovered, making water in a full stream, and being able to introduce a sound of a full size into the bladder, so as to prevent a recurrence of the contraction.

The instrument used on this occasion was ten inches in length, exclusive of the handle, and rather more than one quarter of an inch in diameter. The lancet measured three-sixteenths of an inch at its broadest part; it terminated in a sharp point, and could be made to project by pressing a button on the other end of the stilet to which it was attached to the length of half an inch, returning to its place within the silver tube when the pressure was withdrawn by means of a spiral spring. In using it, one cutting edge of the lancet was directed towards the pubes, the other towards the perinæum. The advantages of dividing the stricture by this method, as compared with other methods of operating, are 1st, that the free opening made in the perinæum prevents all danger from infiltration of urine; 2dly, that the fore-finger of one hand, being applied to the posterior surface of the stricture, serves as a guide for the lan-

cet, and enables you, with the exercise of a little skill and caution, to make an exact division of the stricture."

Fistulæ in Perinæo.—After pointing out the necessity for freely dilating the natural passage, before the fistula can have a chance of closing, Sir Benjamin adds his latest experience. "I formerly," says he "have advised the patient never to void his urine without the aid of the catheter; but I am now inclined to believe that the irritation thus kept up tends, on the whole, to delay rather than to expedite the cure. At other times I have kept the patient in bed for some weeks, with an elastic gum catheter constantly in the urethra and bladder; but I cannot say that, with my present experience, I have much more faith in this mode of treatment than in that which I mentioned before. After a few days the urine generally begins to flow by the side of the catheter, which does not therefore answer the purpose for which it was introduced, of preventing its escape by the sinus. Then in many cases the catheter causes an abundant suppuration of the urethra; and the purulent discharge, finding its way into the sinus, prevents it from closing as much as it would be prevented by the contact of the urine."

Blind Fistula in Perinæo.—Sir Benjamin advises the following method of treatment. Watch for the opportunity when matter is collected in it, and then establish an external opening by dividing the integuments over it with a lancet, so as to convert it into a fistula of the ordinary kind. There are some of these cases, however, the treatment of which requires a more particular explanation. A patient may apply to you who perhaps has had gonorrhœa formerly, followed by a slight obstruction of the urethra, complaining at the same time of a discharge from the urethra, which he calls an obstinate gleet. You examine the perinæum, and you find in it a small tumor, not larger than a horse-bean or filbert. It is at some distance from the surface, and the patient says that it has been co-existent with the gleet, and that it is sometimes inflamed and tender. Now this little tumor indicates the existence of a blind fistula. There is a small orifice in the urethra, and a narrow channel leading from it into the centre of the tumor; and every time that the urine flows, a very small quantity finds its way into this channel, escaping from it immediately afterwards by

regurgitation into the urethra. In consequence of the smallness of the cavity, and the quantity of solid matter deposited on its outside, the fluctuation of fluid in it is not perceptible. I have known this state of things to continue, producing more or less occasional inconvenience for many years. The first thing necessary to the cure is to make an opening in the perinæum leading into the cavity in the centre of the tumor. But this may not be very easily accomplished, on account of the smallness of the cavity. You should introduce the lancet somewhat obliquely, so as to divide the tumor as nearly as possible through its centre. Then introduce some lint, so as to prevent the wound uniting by the first intention. After three or four days you may remove the lint, and then you will ascertain whether you have done what was required, by observing whether, when the patient voids his urine, any portion of it flows through the opening which you have made. If this be the case, nothing further is required than that the stricture should be dilated in the usual way. If, however, no urine flows through the opening, you may proceed thus:—Introduce a piece of caustic potash through the wound into the centre of the tumor, so as to make a considerable slough. A portion of the tumor being thus destroyed, the probability is that, when the slough has separated, it will be found that the central cavity is exposed, and that you have accomplished the object which you had in view.

[Obstructions of the urethra may arise from *mechanical injury* to various parts of the urethra, as, from the violent pressure of some circular body, as a ring round the penis, or a blow upon the urethra as it passes under the pubes where the mucous membrane is especially liable to suffer from such a cause. Sir Benjamin gives the following directions with regard to the treatment.]

“In all cases,” he says, “in which there is reason to believe that the urethra has been divided or lacerated in consequence of an injury inflicted on the perinæum, it is the duty of the surgeon not only to look at the great and immediate danger, but to guard against future ill consequences; and much may be done at this period towards preventing a most serious inconvenience, which would be relieved with difficulty afterwards. If there be a penetrating wound, in which the urethra is probably

implicated, an elastic gum catheter should be introduced with the least possible delay, and allowed to remain in the urethra and bladder until the healing of the wound is far advanced, or, at all events, until it is ascertained that the urethra has not suffered; the catheter being, however, occasionally removed for a limited time, if it seems to act as a source of irritation.

In cases of contusion of the perinæum, when the effusion of blood in the perinæum and scrotum, and more especially the discharge of blood from the urethra, or any other circumstances, lead to the suspicion that the urethra has been lacerated, the same treatment should be had recourse to: the gum catheter should be introduced as soon as possible, and allowed to remain for at least some days after the occurrence of the accident. The extravasation of blood does not in itself justify the making an incision in the perinæum; and indeed, according to my experience, there can be no worse practice than that of making an incision in a case of simple ecchymosis, either in this or in any other situation. But where such extravasation exists, there is always reason to apprehend that there may be further mischief; the progress of the case, therefore, should be carefully watched, and on the first appearance of any symptoms which might be supposed to indicate that urine had escaped into the cellular membrane, or that suppuration had begun to take place, a staff should be introduced into the urethra instead of the gum catheter, and a free incision should be made from the perinæum into it, the gum catheter being replaced afterwards.

But it may be that these measures of precaution have not been adopted in the first instance, and that you are not consulted until after the lapse of a considerable time, when the wound or laceration of the urethra is already healed, leaving the urethra contracted in the situation of the cicatrix. Here you may perhaps succeed in gradually dilating the urethra, as where there is an ordinary stricture. But in a case which I have already mentioned, I have stated that 'this was not accomplished without a great deal of local and constitutional disturbance;' and so it has been in all cases of this kind which have fallen under my observation. Nor will the occurrence of such difficulties be a matter of surprise to any one who bears in mind that here the object is to dilate, not a genuine stricture, but a cicatrix, of the urethra, and who has observed how the cicatrix of an old sore leg inflames and cracks when the subjacent mus-

cles begin to increase in bulk from exercise, or how the endeavour to extend forcibly the contraction after an extensive burn produces the same result. It may be that these difficulties are insuperable under the method of treatment by simple dilatation; and under these circumstances, a small staff having been introduced into the bladder, the cicatrix of the urethra should be divided by an incision from the perinæum, a gum catheter being introduced afterwards, and allowed to remain until the wound is healed over it. But even then much remains to be accomplished. The cicatrix has still a greater disposition to contract than an ordinary stricture; the bougie or catheter must be had recourse to almost daily, and the patient must be contented if he can persevere in the use of instruments of a moderate diameter, as the urethra will invariably resent the attempt to keep it dilated by those of large dimensions."

The condition of the patient is improveable, where the injury of the urethra is limited. But where there has been actual loss of some portion of the canal, the patient must either be content to void the whole of his urine by the perinæum, or submit to an operation for establishing a communication between the anterior and posterior portions of the urethra. This operation is best explained by a case.

"A young man, in making a leap on horseback, received a violent blow on the perinæum from the pummel of the saddle. The immediate consequence of the injury was hæmorrhage from the urethra, and this was followed by extravasation of urine and sloughing of the perinæum to a considerable extent. A catheter was at first introduced into the bladder, but it was afterwards removed. The sloughs having separated, the sore in the perinæum gradually closed, a small fistulous opening only being left immediately behind the scrotum, through which the whole of the urine was discharged. He was in this state seven months after the occurrence of the accident, when he arrived in London, and Mr. Baker advised him to have my opinion on his case.

On introducing an instrument into the urethra, I found an obstruction of the canal immediately below the pubes. Several ineffectual attempts having been made to penetrate the obstruction in the usual manner by bougies and sounds of various sizes, I had recourse to the following operation:—The patient having been placed in the same position as in lithotomy, a staff

was introduced into the urethra, and held by Mr. Hilles, who, with Mr. Baker, assisted me in the operation, with the extremity of it resting against the obstruction. I then made an incision in the perinæum, extending backwards from the part in which the staff was to be felt, in the direction of the prostate gland. It was now evident that not less than three-quarters of an inch of the urethra was deficient below the pubes; the place of it being occupied by a rigid cicatrix. This having been divided longitudinally by the point of the scalpel, I was enabled, though not without some difficulty, to pass the staff from the part at which the extremity of it rested, into the sound portion of the urethra towards the bladder, and then into the bladder itself. The staff was then withdrawn, and an elastic gum catheter having been substituted for it, the latter was allowed to remain in the urethra and bladder. On the ninth day after the operation, there being some degree of irritation at the neck of the bladder, the catheter was removed, being reintroduced, however, after two days more. From this time it was removed at intervals, which were sometimes longer, sometimes shorter, according to circumstances. The wound in the perinæum gradually healed, and in less than ten weeks from the time of the operation was reduced to the diameter of a small pea. The patient was now able to introduce a silver catheter of the size of his urethra into the bladder without difficulty, and he repeated this operation so as to draw off his urine three or four times daily. When he voided his urine without the catheter, by placing the point of his finger on the opening in the perinæum, he was enabled to discharge the whole in a sufficient stream by the urethra."*

* "The last report which I had of this patient was six months after the operation, and to this effect: 'that he had continued to improve, and expected in the course of a fortnight to be as well as ever.'

Since the manuscript of this Lecture was prepared for the press, a case very similar to that described above has come under my care, in the person of a young man nineteen years of age. He had received an injury of the perinæum in leaping over a gate about a year ago. Three quarters of an inch of the urethra below the pubes seemed to be deficient. I made an artificial canal, joining the anterior and posterior portions of the urethra to each other, by perforating the cicatrix with the instrument having the concealed lancet, leaving an elastic gum catheter in the urethra and bladder afterwards. At this time, about ten weeks after the operation, the patient voids his urine by the urethra in a full stream, without pain or difficulty, no more than a few drops escaping by the opening in the perinæum. A common plaster bougie may be introduced readily into the bladder. Mr. Guthrie saw this patient with me, and lent me his assistance at the operation."

While treating of chronic inflammation of the bladder, and speaking highly of the *decoction* of *pareira brava*, Sir Benjamin observes:—"The infusion of *pareira brava*, which has been introduced into the last Pharmacopœia of the College of Physicians, does not at all answer the purpose of the decoction, and is nearly useless. The decoction is made thus:—Take half an ounce of the root of the *pareira brava*, add three pints of water, let it simmer gently, near the fire, until reduced to one pint. The patient is to drink from eight to twelve ounces daily. If so large a quantity of liquid should be offensive to the patient's stomach, he may take the extract of *pareira brava* instead, twenty-five or thirty grains being equal to half a pint of the decoction.

LITHOTRITY.—Sir Benjamin gives a slight sketch of the modern history of lithotrity, which establishes the fact that no man can be said to have wholly invented *and* applied the present lithotritic apparatus. On the contrary, like most other valuable discoveries it has been perfected only by successive and gradual steps.

Sir Benjamin alludes to Baron Heurteloup's application of the hammer. He doubts its superiority to the screw, and believes that "there is nothing that can be done by the hammer which may not be done quite as effectually by the screw, while the latter method is not liable to many serious objections which may be urged against the former."

Sir Benjamin gives a sketch of the instruments which he employs. It is Weiss's screw lithonriptor—its average length about eleven inches, exclusive of the handle. But he has one instrument, made for a particular occasion, thirteen inches long. It is well to have several instruments, of various sizes and shapes.

"For calculi of a small size the construction (except as to the addition of the screw) need scarcely differ from that of the common urethra-forceps which I described formerly; but for larger ones the opposite blades of the forceps should be furnished with projections or teeth; and for those of a still larger size you will find it convenient to be provided with a forceps, in the fixed blade of which there is a longitudinal slit, while there is a corresponding wedge-like projection, fitted to enter the slit, in the opposite surface of the moveable blade."

Through the slit, fragments drop into the bladder, so that a large stone may be crushed. The diameter of the instrument must vary with that of the calculus and of the urethra. It should, usually, be as large as the canal would admit. It should be cylindrical, except in the handle. But it is well to be provided with one, the blades of which beyond the curvature are somewhat flattened, and in proportion broader than elsewhere. It is useful for seizing and crushing the smaller fragments.

So much for the instruments. Sir Benjamin next speaks of the measures preparatory for an operation.

The forceps should never be used in a bladder which will not retain at least six ounces of water. If the organ be irritable, the patient must be placed in the recumbent posture and the catheter introduced every, or every other day, with the view of injecting some ounces of tepid water. In this way the bladder will gradually become educated to containing liquid. If chronic inflammation exists with a deposit of adhesive mucus, the remedies for that state must be adopted. An abundant formation of this mucus forms a great objection to the operation—because it indicates an unfavourable condition of the bladder, and because the fragments are apt to be entangled in it. But where there is only little mucus, this may altogether disappear after the first crushing of the calculus.

The urethra should be dilated so as to admit an instrument of sufficient size and strength. If contraction within or behind the glans cannot be easily stretched, it must be divided with a bistoury.

There is a tumid condition of the prostate, impeding the introduction of the instrument, and rendering the part very liable to bleed. It subsides after a few days of constant repose in the recumbent posture. Sir Benjamin has “observed this state of things to exist especially after travelling in a carriage; and it forms one of many reasons, where the patient has come from a distance, for not recommending the operation to be had recourse to until he has had ample time to recover from the fatigues of his journey.”

Let us pass to the operation.

The patient should be on his back on a sofa, or on the edge of the bed, with a thick cushion under the pelvis, to elevate the neck of the bladder. A silver catheter is then introduced, and as much tepid water as can easily be borne is injected.

“The catheter used for this purpose should be provided with a stopcock, and the extremity of it should not be prolonged a great deal beyond the curvature. It may then be used, not only as a catheter, but also as a sound, for the purpose of exploring the bladder, and ascertaining in what part of the bladder the calculus is, at that time, lodged. This knowledge is always useful, but it is by no means indispensable; and I have often been able to seize a small stone with the forceps which I had not been able to detect by other methods previously. The injection of the bladder having been completed the catheter is to be withdrawn, and the lithotripsy-forceps is to be introduced in its place. In consequence of the peculiar shape of the latter this is less easily accomplished than the introduction of the catheter. The mere depression of the handle is not always sufficient to make it enter the bladder; and it is often necessary at the same time to apply a moderate but steady force during the time that the curved part of the instrument is passing through the neck of the bladder. This is especially the case where the prostate gland is in any degree enlarged. You will know when the instrument has fairly entered the bladder by the facility with which you can move it in any direction, and by your being able to open the blades to any extent without giving the patient pain. You may then explore the bladder with the forceps, and endeavour to ascertain the exact situation of the calculus in it. If it be lying on one side, by opening the blades, and then gently and cautiously turning them towards it, you will probably be enabled to seize it. If you do not succeed by this method, by the following you will rarely fail.

Raise the handle of the forceps so as to bring the convexity of the fixed blade in contact with the posterior part of the bladder; then open the moveable blade, at the same time making a moderate pressure downwards in such a manner as to depress the bladder towards the rectum. The instrument being then gently shaken by a lateral motion of the hand, the calculus, in whatever part of the bladder it may be situated, will roll between the blades and will be seized by closing them. Having been thus carefully secured, by turning the screw it is broken into fragments. The whole of this is a very simple process, requiring but little practice to make you a perfect master of it. When the calculus has been once broken, the fragments are to be seized and crushed in the same manner.

They will fall one after another into the grasp of the forceps ; and there is no limit to the number that may be crushed at one time, except what is afforded by the diameter of the urethra. Every fragment that is crushed adds to the accumulation of calculus matter ; and if the accumulation be very large, it becomes difficult, or impossible, to withdraw the instrument without injury to the membrane of that canal. The marks on the handle of the instrument inform you of the exact extent to which the blades are separated ; and you must use your own discretion, founded on your knowledge of the size of the urethra, as to the point at which you should stop. The forceps first used being then withdrawn, you may use a second, and even a third, in the same manner ; and thus you may not only crush a great number of fragments at one operation, but you may remove from the bladder a great deal of what has been crushed."

The forceps should be withdrawn very slowly and gently. When as much as is prudent has been done, the catheter should be re-introduced, and the bladder emptied.

"Another syringe-full of water may then be injected, which the patient may be left to void by his own efforts, or which may be drawn off by means of a large catheter, with two apertures near the extremity, of sufficient size to allow some of the smaller fragments to escape through them."

Sir Benjamin thinks it very unsafe to allow a patient to walk after the operation. He should remain on his bed or sofa. Whenever there has been rough usage of the urethra, at all events, an opiate should be given after the operation, and the bowels should be attended to.

The patient should be watched lest a fragment stick in the urethra, and occasion retention. But this is unlikely if the patient reposes, and the fragments seldom find their way into the urethra for the first day or two. After this they begin to pass away with the urine, and the patient should collect them.

If in the operation the stone is of large size, the forceps with the slit in one blade and wedge in the other, should be made use of. Scarcely any calculus will resist this.

A small calculus may be got rid of by a single operation. A larger one requires several. It should not be repeated until the patient has recovered from the effects of the preceding one, nor should it be delayed long afterwards.

Of course, it is of the first importance to get rid of every fragment. The bladder should be explored with sound *and* forceps, at least twice after the cure seems complete. With this precaution, when the patient can empty the bladder by his own efforts, the chance of a fragment remaining is very slight.

“But it is quite otherwise in those cases in which the patient in consequence of an enlargement of the prostate gland, is unable to empty the bladder by his own efforts. Hence only a small portion of the crushed calculus will come away in the stream of urine, and you must be satisfied with washing out the remainder of it through the catheter by repeated injections of tepid water. Mr. Weiss has invented a forceps which, when the blades are opened in the bladder, answers at the same time the purpose of a catheter, and this is often very useful; still on ordinary occasions you will find nothing to answer the purpose better than a silver catheter of as large a size as the urethra, with two very large apertures near the closed extremity, not placed laterally, as in the ordinary catheters, but one on the anterior or concave, and the other on the posterior or convex surface. It may indeed be said, that, in the cases now referred to, this kind of operation ought not to be recommended. But it will sometimes happen, that although the patient may have had no difficulty of emptying the bladder before the operation, the prostate may be rendered tumid in consequence of its being irritated by the repeated introduction of the instruments, so that he is unable to empty the bladder afterwards. Besides, although this state of things adds to the difficulty of the operation, it is not sufficient in itself to prevent it being brought to a successful termination; and in cases in which there is good reason to believe that the calculus is of a small size, it forms no objection to it.”

Sir Benjamin next adverts to the inconveniences or dangers of lithotrity.

1. *Hæmorrhage.* This may arise from the forcible passage of the lithotrity forceps through the neck of the bladder. Sir Benjamin has known it discolour the urine for two or three days. But it has never interfered with the operation.

2. *Rigors* may follow lithotrity. The rigor is usually produced by the stretching of the urethra by the withdrawal of the forceps; or it may be occasioned by a fragment of calculus sticking in the urethra. A dose of opium may prevent the

rigor altogether, or defer it till next day. Rigors do not appear to interfere materially with the patient's recovery.

4. Sir Benjamin refers to two cases in which fragments of calculus impacted in the urethra gave rise to urinous abscess in the perinæum. One patient died two months after with symptoms of diseased kidney. The other patient got well.

4. Sometimes the patient suffers from pain in the whole canal of the urethra, from the simultaneous escape of many fragments. Sometimes he labours under great irritation of the bladder, apparently from a fragment lodged near its neck. He may have complete retention, but Sir Benjamin has never seen it last for any time.

The patient should partake plentifully of diluting drinks. If fragments lodge, a middle-sized catheter may be introduced into the bladder, when they may be either dislodged and come away, or be pushed back and afterwards crushed. Sir Benjamin has removed fragments from the anterior part of the urethra by long slender forceps. It *might* be necessary to make an incision in the penis or the perinæum. Sir Benjamin, however, believes that if perfect repose is enjoined after the operation, the passage of fragments will seldom occasion serious inconvenience.

5. Inflammation of the mucous membrane of the bladder may occur. It generally subsides spontaneously in two or three days, or continues till a fragment is either discharged from the urethra, or pushed back into the bladder by the catheter. In one instance Sir Benjamin saw this inflammation prove fatal. The stone had been large—perhaps the patient had not been kept quiet.

On the whole Sir Benjamin is of opinion that lithotritry has great advantages over lithotomy. He touches on the cases to which it is not applicable.

1. In boys, under the age of puberty, lithotomy is too successful to be abandoned. The urethra is not wide enough to be favourable to lithotritry.

2. Lithotomy is attended with little danger in the female, while her short and wide urethra admits too readily of the escape of the injected water by the side of the lithotritry forceps.

3. Large stones are not well adapted for lithotomy, but they are still worse adapted for lithotritry. Sir Benjamin

inquires whether it would not be well to crush first and cut afterwards.

4. Lithotritry is not well adapted for cases of enlargement of the prostate gland, where the patient cannot empty the bladder, unless the calculus is small; *then* the fragments may be washed out of the bladder through a large catheter. When the tumor of the prostate projects into the bladder, it is difficult to elevate the handle of the instrument sufficiently to catch the stone readily.

5. Lithotomy is very fatal where the kidney is diseased, especially, Sir B. Brodie supposes, from the loss of blood that it entails. Crushing he thinks *safer*. But any shock to the system must be hazardous, and it must, usually, be more advisable to palliate.

After a case, Sir Benjamin sums up what he has to say in favour of lithotritry in these words:—

“With the exception of such cases as those which have been enumerated, there are few to which this method of treatment may not be advantageously applied. It may be said that the exceptions are numerous; but they are the result chiefly of delay. If a patient seeks the assistance of a competent surgeon within six or even twelve months after a calculus has descended from the kidney into the bladder, the urine having remained acid, it will rarely happen that he may not obtain a cure by a single operation, and with so small an amount of danger that it need scarcely enter into his calculations. As time advances, the facility with which he can be relieved diminishes, and after the lapse of two or three years, especially if the urine has become alkaline, it is probable that the calculus will have attained such a size as to render the old operation preferable, and that the access of disease in the bladder or kidneys may render any operation hazardous. It would be absurd to say, and it would be unreasonable of human-kind to expect, that an operation that has for its object to relieve them of a disease so terrible as stone in the bladder, can be always free from inconvenience, and difficulty, and danger. Nevertheless, from what experience I have had, I am satisfied that the operation of lithotritry, if had recourse to only in proper cases, is not only much more successful than that of lithotomy, but that it is liable to fewer objections than almost any other of the principal operations of surgery.”

46.—ON THE TREATMENT OF THE HÆMORRHAGIC DIATHESIS.

By JAMES MILLER, Esq., F.R.S.E., Lecturer on Surgery, and one of the Surgeons to the Royal Infirmary of Edinburgh, &c.

[We need not remind the reader that several cases of this description have lately been recorded, all of which have been most disastrous in their issue, showing how little dependence is to be placed on treatment however energetic or varied.

It is probable that the vice in question is connected both with the blood and blood-vessels. In all the cases the blood is described as preternaturally fluid, and in some deficient in fibrin, although this latter assertion is not substantiated by chemical analysis. A deficiency of fibrin, however, seems to be one very probable cause of the hemorrhagic tendency, and “as the bleeding advances so does the disproportion of fibrin as well as of the blood corpuscles, the effused fluid towards the termination of the case scarcely staining the bandages and often resembling a colourless serum.”

It seems evident that the hemorrhage in question is capillary “or at all events proceeds only from the capillaries and the minutest ramifications of the arterial twigs”; for if arteries of large size were involved they might be checked much more easily by the ligature. The diminished power of coagulation of the blood must therefore depend in a great measure on want of its due proportion of fibrin. Dr. Carpenter observes in his work on Physiology, that “ordinary coagulation depends on the fibrin of the blood, which separating itself from the fluid in which it was previously dissolved, and during this process, attracting the red particles from a clot more or less dense in proportion to the amount of fibrin which it contains. That the coagulation is due to the fibrin, and that the red particles are merely passive in the process, appear from several considerations.”]

But the proportion of fibrin is not to be here estimated in regard to the general mass of the blood merely, but rather in regard to the blood globules; it being only when excessive in proportion to these, that the tendency and power of coagulation become most marked. In chlorosis, for example, in which condition the globules are diminished, while the fibrin remains the same, the clot of drawn blood is firm, though small, and not unfrequently exhibits the buffy coat; and we know that in

chlorotic patients, hæmorrhage is remarkably unfrequent; while in simple plethora, in which the globules are excessive, the clot is of an opposite character. Sometimes both globules and fibrin are deficient, and in experiment it has been found "almost impossible to deprive blood of its corpuscles, without, at the same time, defibrinising it." This double deficiency is found to obtain in scrofula, and seems to exist also here: and between the two cachexics, the scrofulous and hæmorrhagic, we shall find other points of similarity. In such a state of utter impoverisation, the blood will, of course, be unequal to the efficient performance of many vital actions, coagulation among the rest.

Mere loss of blood tends to produce this deficiency of both fibrin and globules, but not in an equal ratio. At first the latter are chiefly removed; and consequently, at an early period of the case, loss of blood thus favours natural hæmostatics, by increasing the proportion of fibrin to globules, and thereby augmenting the tendency and power of coagulation; but the hæmorrhage continuing, both fibrin and globules disappear—hope from coagulation then becoming more and more feeble, as the experience of such cases as those we are now treating of most abundantly proves.

But not only is diminution of the proportion of fibrin favourable to continuance of hæmorrhage, by inducing non-coagulability of the blood; it also directly predisposes to it, by occasioning congestion of the capillaries. "A certain degree of viscosity has been found, by the experiments of Pousseuille, to favour the passage of fluid through capillary tubes; and thus, if the viscosity of the blood be diminished by a loss of part of its fibrin, stagnation of the current, and extravasation of a portion of the contents of the vessels will be the result. This has been fully proved by the numerous experiments of Magendie." "It has been ascertained that one of the effects of a diminution in the proportion of fibrin is a tendency to the occurrence of hæmorrhage or of congestion, either in the parenchymatous tissue, or on the surface of the membranes." This condition of capillary congestion may thus of itself lead to hæmorrhage in an unbroken texture; and in the case of a wound, if a continuance of such tendency to capillary congestion be coupled with impaired or lost power of coagulation in the accumulating fluid, we can readily understand how the amount and continuance of hæmorrhage may be thereby dangerously enhanced.

We believe, then, that in the hæmorrhagic diathesis, the blood contains a less proportion both of fibrin and of globules, than in health; and that in consequence it predisposes to capillary congestion, and is more or less deficient of the power of coagulation.

[“ But the blood alone is not to blame. The capillaries and arterial tubes are doubtless deficient in their healthy properties;” they seem to be attenuated in their coats, and in such cases of hæmorrhagic diathesis they have been found “reduced to half their usual thickness, but this seems more probably the result of passive dilatation by loss of contractility, than of original deficiency of the fibrous coat, as Dr. Burnes and some others seem to suppose.” In health the capillaries possess that degree of contractility that their orifices are easily closed, but in the hæmorrhagic diathesis the power of contraction seems so much impaired that they are more like passive tubes.]

Thus, to constitute the hemorrhagic diathesis, we have not only the blood flowing through dilated and non-contractile tubes, but sent thither in greater volume than in ordinary and healthy circumstances, thinner and more fluent than in health, and little if at all able to arrest its own course by assuming the solid form. In addition, the capillary tunics are not only thin, but weak, and easily lacerated; a slight bruise produces serious ecchymosis; coughing may induce hæmoptysis; a sneeze brings on epistaxis; diarrhœa occasions copious evacuations of blood by the rectum; and extravasation is not unlikely to follow but slight causes within internal cavities. The whole circulating system, besides, is usually in an irritable and excited condition; the pulse being considerably above the healthy standard, and the heart acting with unusual force and sharpness. Not unfrequently, a febrile condition at the same time exists; and when it does exist, it increases the intensity of the diathesis.

Such being the apparent causes of the disorder, we are now prepared to turn our attention to the *cure*.

1. *Can we amend the faulty condition of the blood?* Were the red globules in excess we could easily diminish their amount, thereby favourably increasing the proportion of the fibrin, by venesection; and thus we should at once readily obtain blood more disposed to firm coagulation. But the globules are already themselves deficient, and consequently from that mode of treat-

ment, (what may be termed the negative increase of the proportional amount of fibrin,) no hope is to be entertained. Whether we will or not, however, bleeding goes on from the part, at first drawing more from the globules than the fibrin; and during this brief and early period of the case, a comparatively favourable opportunity is thus afforded for coagulation. Of that we are bound to avail ourselves, as it flits by; but it is plainly a condition of the system which we dare not seek directly to imitate or obtain. As the bleeding continues, both fibrin and globules disappear, ultimately little else than serum remaining in circulation; and during that part of the case, all efforts towards arrestment must plainly be especially hopeless.

Can we effect a direct and actual addition to the amount of circulating fibrin? We have already hinted at a considerable similarity between this hæmorrhagic condition of the system and that of scrofula. In both, there is a lamentable want of fibrin. In the latter form of disease, albumen is constantly being substituted for the more valuable plastic material; and in the treatment, it is a principal feature to increase the power of elaborating albumen into fibrin; in other words, to increase the supply of the latter. A similar mode of procedure, therefore, with a like object in view, will be available in the hæmorrhagic diathesis. The general powers of the system are to be invigorated by nutritious diet, &c. This is very suitable in struma, when plenty of time is afforded for such treatment taking effect. But in the hæmorrhagic diathesis we have comparatively but a very brief period for action, and can repose no confidence in aught so dilatory. Nevertheless we are not to transgress the principle, and are to be guided by it in the dietetic portion of our treatment. The patient is to be plentifully supplied with good air, and with a full allowance of nutritious, but not stimulating food. He will be thirsty from loss of blood, and glad to slake his thirst with aqueous fluids. But he ought not to be allowed to do so. These would but add to the serum, and we have too much of that already. As the bleeding proceeds, faintness comes on; and wine, brandy, and cordials, are the usual remedies. These will do but little good in the matter of the fibrin; and by freshly exciting and accelerating the circulation, will destroy any chance of benefit we might have obtained by the approach to syncope favouring coagulation. In terror of such inopportune excitation of the arterial system, other practitioners follow a mode of treat-

ment diametrically the opposite, allowing the patient nothing but the weakest aliment, and that even in starving moderation; forgetting, that with such a run upon their stock of capital, the treasury will soon be wholly empty, unless active measures be adopted to keep up the supply, and if possible, with a more solid and more sterling currency. The system of diet, then, in the protracted cases, we conceive ought to be full and nutritious, yet by no means stimulating. As a prophylactic remedy, the dietetic mode of treatment promises to be of much value, but it is unequal to meet the actual emergency, there being no *time* thereby to amend the deficiency of fibrin.

Can this be done by inducing an *inflammation*? That the quantity of fibrin is invariably increased during active inflammation, has been satisfactorily shown by M. Andral—the increase commencing at once, and being strictly proportional to the advancement and intensity of the inflammation. To this result the existence of inflammatory fever is not essential; it is the local inflammation itself which causes it; yet the inflammatory fever being usually proportionate to the amount and intensity of the local action, will consequently be almost invariably accompanied by, though not causing, this increase of fibrin. And it is important further to observe, that a mere febrile condition, unattended by an inflammatory action, so far from increasing the amount of fibrin, has a precisely opposite effect. In idiopathic fever, for example, the amount of fibrin is invariably found diminished, and the patient prone to hæmorrhage,—another strong reason why a stimulating system of treatment, as by wine, brandy, &c., is not to be adopted. An active local inflammation, then, and the less accompanying fever it has the better, (actual excitement of the general circulation being manifestly inimical to our object,) will *speedily* increase the proportion of fibrin, and thereby promote the formation of coagulum. But *mere* coagulation is not what we desiderate; it is the formation of a firm and dense clot; and it is just this form of slow yet sure coagulation that an inflammation will afford. And this leads us to remark, that even in the emergency of the hæmorrhagic diathesis, when every moment is of importance, we are not to seek for rapid coagulation which is usually loose and porous; but for rather a slow completion of that process, whereby a more solid and efficient clot will be obtained.

Are we then to induce this influence in the site of the hæmor-

rhage? No. By doing so we should amend the general state of the circulating fluid, but sadly deteriorate the local, increasing the volume of blood, and inducing a tumultuous circulation, in a part which has no power to control it;—an aggravation of the bleeding must inevitably follow. Besides, by wilfully inflaming the part, we should render it intolerant of pressure, which, as we think, as our most trust-worthy item of local management. An irritant applied at some distance from the bleeding-point, however, so as rapidly to excite a superficial inflammation on a comparatively unimportant part, might not only obtain the desired increase of fibrin in the general mass of blood, but also have a derivative effect on the actual source of the hæmorrhage, and so fulfil a twofold indication towards its arrest. This plan, therefore, of directly amending the proportion of the fibrin, seems both feasible and safe, and consequently worthy of trial. And, on the principle of revulsion, it is not possible that *dry cupping*, employed at some distance from the bleeding point, might have the effect of at least diminishing the hæmorrhagic flow?

But, turning from such direct interference with the fibrin, have we any means by which, no matter how, *we can promote satisfactory coagulation of the blood*, and thereby use them as hæmostatics? *Acetate of lead with opium*, given internally, has long been famous in this respect, and that not undeservedly. Dr. Elliotson has shown that the lead can be given in heroic doses, and even for a considerable time, without any untoward result, with the simple precaution of keeping the bowels freely open—an indication which we shall find to be otherwise of much importance in the treatment of the hæmorrhagic diathesis. As a general astringent, according to Dr. Christison, “no remedy yet known, equals in efficacy the *pillulæ plumbi opiatæ* of the Ed. Ph.; each of which contains three grains of the acetate of lead, and half a grain of opium, and of which, from two to six may be given in the course of the day, according to the urgency of the symptoms.”

This remedy doubtless has the power of calming the general circulation; probably it increases the tendency of the blood to coagulate; plainly it has a depressing influence on the nervous system, and we know that this “favours coagulation of blood in the vessels; besides, there is good reason to believe that a tonic or astringent effect is exerted on it by the astringents themselves; and thus it justly maintains a claim on our attention as a valu-

able means of combating the hæmorrhagic diathesis. In the great majority of cases, it can be given freely with perfect safety. Should it be found to disagree, it may be conveniently superseded, at least for a time, by the sulphas aluminæ et potassæ, in doses of fifteen or twenty grains or upwards—a powerful, and in all cases safe astringent.”

Nauseating remedies will moderate the heart's action, and they seem to have besides a powerful effect in arresting hæmorrhage. That during sickness tendency to firm coagulation of the blood is increased, is a fact well attested by experience. Thus it is probable that bloodletting often succeeds as a hæmostatic; but by the suitable administration of nauseating remedies, the same good effect is obtained, while the valuable fluid is yet saved to the system; and in the case of the disease of which we are now treating, such saving is obviously precious indeed. Cautious and small doses then, of ipecacuan or tartrate of antimony, producing and maintaining nausea, will assist in the hæmostatics, not only by moderating the general circulation, but also by favouring coagulation in the capillaries. But this treatment ought not to be pushed to actual emesis, as has been proposed. All the good effects of the medicine are obtained by an action short of vomiting, and that effort is well known to be by no means a sedative; it shakes the frame to the centre, and often produces powerful reaction, even in those systems which injury or sickness may have reduced almost to the lowest ebb.

But it may be said “the patient gets sick enough from the bleeding alone, and the exhibition of nauseants would consequently, at the best, be but an act of supererogation.” True, the patient becomes sick in the progress of the case, *but not at the right time.*

The advantage of skill and experience is not so much to invent remedies, as to know *when* they ought to be administered. By the time nausea has been occasioned by mere loss of blood in this affection, that fluid has lost much of the fibrin in which it was from the first sadly deficient, and cannot now avail itself of the lull in its circulation, to be converted into the solid form. But induce an artificial nausea at an early period, while there is yet fibrin and a power of coagulation; if possible, take advantage of that period when the bleeding has as yet but diminished the volume of globules, leaving that of the fibrin intact—and then, but not later, we may hope for a happy result;—

another reason for *early* as well as energetic practice in the treatment of the hæmorrhagic diathesis. Besides, during the febrile paroxysm which usually attends on the hæmorrhagic crisis, the nauseating treatment will plainly tend to remove this, at the same time that it favours coagulation, and opposes capillary congestion.

In the case of hæmorrhage after tooth extraction, when binding up of the jaws is necessary, efficiently to obtain the all-important pressure, a passage for the internal remedies by the mouth is to be contrived, as in fracture of the jaw; and failing that, their exhibition will be by the rectum. And it is very plain, that vomiting, from whatever cause, is, under these circumstances, to be carefully avoided.

If we can diminish the amount of the serous portion of the blood, the fibrin remaining, shall we not thereby assist the blood in its assumption of the solid form? In theory, such a plan promises fairly. A smart dose of elaterium, obtaining a serous discharge from the bowels, might have a most salutary effect,—not the worse for having a depressing action on the nervous influence, we having already seen that so coagulation within the vessels is favoured. At a later period, its exhibition would require caution, it being now of importance to oppose and retard exhaustion. But still its exhibition is practicable, by administering support at the same time, adding as it were to one part while we draw from another, just as it has been lately proposed to combine the exhibition of tonics and stimulants with the frequent repetition of tobacco enemata in tetanus. But, leaving theory and coming to facts, we find that the sulphate of soda has on more than one occasion, been found of signal service in the hæmorrhagic diathesis. Dr. Otto, of Philadelphia, and Dr. Hay, Fellow of the Massachusetts Medical Society, are loud in its praises, seeming to regard it almost a specific; but, be it remarked, *only when administered in such doses as to purge actively*. By M. Andral, sulphate of soda acting on the blood is considered the *best* means of retarding its coagulation, and consequently of obtaining a firm clot when it is ultimately formed. The inflammatory clot is tardy but dense; and so is that of the sulphate of soda. When coagulation is rapid, the clot is loose, has a large 'proportion' of serum entangled as it were in its substance, and expels little or none of it by subsequent contraction; "on the other hand, if the coagulation be

slow, the particles of fibrin seem to become more perfectly aggregated, the coagulum is denser at first, and its density is greatly increased by subsequent contraction." That is the kind of coagulation we want,—slow, dense, and efficient; in many, if not most of the cases of hæmorrhagic diathesis, we have rapid and loose coagulation without arrest of hæmorrhage. Besides, one of the best antidotes to poisonous effects resulting from the internal exhibition of acetate of lead, is the sulphate of soda; so that this remedy is useful in the treatment of the hæmorrhagic diathesis on three counts. 1. By obtaining serous discharge from the bowels, the mass of blood is indirectly acted on so as to favour solid coagulation; 2. Suitable coagulation is also promoted by direct admixture of the salt with the blood; and, 3. All bad effects are by it obviated, which might otherwise proceed from lead previously administered. The lead and sulphate of soda must not be given together, however, with a conjunctly remedial object; as the former would be precipitated in an insoluble form. In a case mentioned by Dr. Allan, much benefit was derived from smart purgation by sulphate of magnesia, showing that the *purgative* action is probably not the least important.

II. Let us now turn our attention *to the condition of the capillaries*. We have already stated the probability that the acetate of lead has a directly astringent effect on the capillaries, besides its action on the blood and nervous system. *Opium*, we believe, has a more directly tonic effect on the extreme vessels; and it is by such action that its beneficial effects in gangrena senilis have been attempted to be explained. Besides, its exhibition will have a most salutary influence in quelling that general nervous tumult in the circulation, which is so sure a follower of excessive loss of blood. The happy combination of two such remedies, in the pil. plum. opiat., cannot but be regarded, then, as constituting a most powerful remedy in the hæmorrhagic diathesis; acting directly and favourably on the blood; calming the heart's action, and the general circulation; subduing the nervous influence; and correcting, in no slight degree, the degeneracy of the capillaries themselves.

[*Styptics* will occasionally act beneficially—these are spirits of turpentine, solution of the nitrate of mercury, recommended by Mr. Nasmyth, of Edinburgh, creasote, nitrate of silver,

which acts not only by constringing the textures, but also by forming a coagulum of its own by its immediate action on the fluids in contact. The *cautery* is on many accounts an improper remedy in these cases—it may be well enough in ordinary cases as it sears the surface, puckers and twirls up the vascular mouths, and mechanically shuts them by a dense coating of eschar, which adheres firmly to the subjacent textures at every point. But in the hæmorrhagic diathesis “the vessels are unable to pucker and contract, the eschar is comparatively soft and will not adhere.” The uselessness of the actual cautery is shewn by the several cases recorded. No doubt cases can be referred to where the cautery was successful, but they are not cases of the real hæmorrhagic diathesis.]

On *pressure*, we would mainly rely, as the local treatment adapted to the hæmorrhagic diathesis. Having applied the nitrate of silver gently, so as to obtain its minor effect, and thus, by a temporary cessation of the bleeding, secure a dry bed on which the compress is to be laid, we lodge a portion of lint, accurately adapted to the hæmorrhagic surface, and over this another and another, increasing in size, so as to make a graduated compress, whereby pressure can be applied with power, and at the same time with great accuracy. For we believe that when pressure does fail, it is because it has been inaccurately applied, *i. e.* not duly directed on the bleeding point, either by blood becoming interposed, or in consequence of original mal-adjustment of the apparatus. A dry compress alone is efficient; and should we find the lint becoming saturated with blood, the oozing still continuing through the dressings, we must at once remove all, and re-adjust them with still greater attention to nicety of application. Supposing the bleeding surface to be situated on a leg or arm, the limb below the compressed point must be uniformly supported by a bandage, otherwise congestion followed by ecchymosis as well as œdema, will most probably result. But while the pressure is uniform and accurate, it must not be severe; for one of the characteristics of the disease is, that pressure is not easily borne; it is apt to occasion “great distress, pain, throbbing, and irritability.” Severe pressure, pertinaciously employed, would produce inflammation, ulceration, sloughing, one or all, and of course aggravate the malady. But if the compression be begun moderately, and regulated by prudence, more especially if it have been both

accurately and *early* applied,—before the part has become inflamed and swollen by other less appropriate and effectual remedies,—such untoward consequences need not be apprehended. On the general surface, compression can be managed by an ordinary bandage regulating and maintaining the compress. In the case of the alveolus, a little peculiarity of dressing is required. Sponging out the cavity, a pointed piece of nitrate of silver is passed to its bottom, in contact at the same time if possible with its sides, and held there momentarily. It is quickly withdrawn; and while the bed it leaves is still dry, this is rapidly and accurately filled by a thin strip or strips of lint, pushed carefully and firmly down by a probe, director, or other implement suitable for the purpose. Over the top of the thus tightly filled alveolus, is placed a dossil of dry lint; over this a wedge of cork, with a similar one on the opposite side, their thick ends looking forwards; the jaws are then firmly shut, and retained so immoveably, by turns of a bandage, in the same way as for fractured jaw, a central interspace being left for the giving of food and medicine, and for the free circulation of cool air in the mouth. The pressure proving successful, the dressing will of course be left undisturbed for a considerable period. In leech bites, mere punctures, superficial wounds in the face, &c. compression will be most conveniently as well as effectually obtained, by firm application of the twisted suture.

[Cold has been recommended as a remedy; but when we remember that the part is already vitally weak, and that the primary effect of cold will depress that vitality, we must not de end upon it.

Delegation of the principal artery leading to the part, is obviously hopeless. *Transfusion*, however, may prove a much more valuable remedy; as the blood of the patient is lamentably deficient in both globules and fibrin, especially the latter, and if the blood of a healthy person can be substituted, we cannot but see that it is likely to be an excellent remedy. If we were to make a selection of remedies we should do as follows:]

1. *As to internal remedies.* We would administer the acetate of lead and opium; with cautious doses of antimony or ipecacuan, so as to induce and maintain nausea, short of emesis; and sulphate of soda would occasionally be exhibited in smart purgative doses. At first, we would give nothing in the shape

of food or drink, being wishful to promote the state of nausea and depression, as favourable to the hemostatic result. But should the bleeding continue, our first and strongest effort having failed, we would then support the strength and circulation by nutriment, frequently given in small quantities, as soup, animal jelly, &c., avoiding aqueous fluids, as well as wine, brandy, and all other stimulants, unless driven to the latter at the eleventh hour and in despair.

2. *Of the local remedies*, we would hold accurate yet moderate pressure on the bleeding point, with uniform support of the lower parts when necessary, to be by far the most important; at the same time favouring as much as possible the application of atmospheric influence, and never trusting in a soaked and oozing compress, but instantly removing it to make way for a more accurate re-adjustment. Experience is yet wanting to attest the propriety of irritants and dry-cupping, applied at a safe yet convenient distance; the one with an inflammatory, the other with a simply revulsive object.

3. Failing in the above treatment, we would unhesitatingly have recourse to transfusion, at a period sufficiently early to afford a fair prospect of success.

London & Edin. Monthly Journal of Med. Sc., July, 1842, p. 567—590.

[Some very interesting cases of bleeding after extraction of a tooth have lately been related in the Journals, several of which have terminated fatally. Mr. Roberts, of Edinburgh, relates a case in which a friend of his completely succeeded in stopping the hæmorrhage by filling the bleeding cavity with plaster of Paris. From the plastical nature of this substance when moistened, we may conceive how readily and completely it may be pressed into every part of the bleeding cavity, and by its rapid consolidation how it may form the most perfect plug. See *Medical Gazette*, May 6, 1842, p. 269.

Dr. J. H. Bennet, in a note to Dr. Cormack, states—that a very important change in the blood, in hæmorrhagic diathesis, consists in the structural alteration of the corpuscles. On one occasion, he examined the blood of a patient labouring under purpura hæmorrhagica, and found that “the larger number of corpuscles were changed in form. Some were of an angular or oblong shape, others serrated or notched at their edges, whilst numerous small shreds or granules were floating loose amongst

them. In short, the blood corpuscles were broken down, and presented an appearance similar to what he had seen them do in some specimens of putrid blood." Dr. Bennett further says, "Mr. Miller in his paper, and Dr. Hay in the discussion which followed it, alluded to the well-known fact, of the benefit derived from purgative doses of sulphate of soda. Now every histologist is aware, that, with the exception of white of egg, there is no fluid which tends to preserve the blood globule in its normal state so well as a weak solution of the sulphate of soda. Mr. Miller conceives that it acts on the blood by producing coagulation, and, I would also add, by its tendency to preserve the corpuscles in a normal state, and thus prevent the morbid structural alterations which they undergo in this disease.

Ibid, Aug. 1842, p. 787.

47.—ON MR. STAFFORD'S TREATMENT OF STRICTURE.

By WM. COULSON, Esq., Surgeon to the Magdalen Hospital, &c.

Cases of stricture occasionally occur, which the ordinary plans of treatment fail to relieve or cure. These cases may be arranged under three or more classes: the first, in which there is simple stricture of the urethra, so complete, however, as sometimes to cause retention of urine; the second, in which two, three, or more inches of the urethra, are thickened and contracted, and often complicated with fistulous openings in the perineum; the third, in which one or more bad strictures exist in an extremely irritable urethra, which is frequently combined with an irritable state of the whole system.

[Three very interesting cases are produced to elucidate the above varieties, and to shew that, after every other method had failed, Mr. Stafford's mode of dividing the part with his instrument was successful.

The first case was a Mr. R. æt. 50, a wine merchant, who had had the disease 20 years, but who suffered more especially in consequence of it during the last few years. Mr. Grove, his family surgeon, first attempted its cure, and so far accomplished his purpose that the urine was passed with comparative ease; but in consequence of improper living the stricture again increased to an alarming extent, when Mr. Coulson was consulted and made use of the caustic bougie with advantage. But the

disease again recurred, and it was necessary to puncture the bladder through the rectum. During the existence of the canula in the orifice, (which was for five days,) the stricture was again attempted to be relieved by the armed bougie, but in vain—the accumulation of urine again took place, and Mr. Stafford was then called upon to cut through the part in the following way:]

An armed catheter, No. 8, was passed down to the stricture, the lancetted stilette pushed forward twice, the stricture perforated, and a No. 4 silver catheter immediately introduced with perfect ease after the withdrawal of the armed catheter. Not a drop of blood was lost, and the patient was scarcely conscious of pain from the two incisions. The catheter was retained in the bladder two days, and after this the water passed in a good stream. I now passed a catheter daily, gradually increasing the size to No. 9, when Mr. R. considered the cure complete. As a precautionary measure he occasionally introduces a catheter for himself.

[In the next case the stricture was situated about 3 inches down the urethra, through which no instrument could be passed. There were three openings in the perineum through which the greater part of the urine passed, and the whole perineum presented a hard cartilaginous mass. The armed bougie was tried for five weeks without success, and Mr. Stafford's plan was then adopted.]

No. 6 lancetted stilette was introduced every other day until the urethra was rendered pervious to the extent of five inches. I then found it necessary to employ a small straight urethral perforator, as the calibre of the curved instrument was too large for the perforation which the stilette made. I succeeded in passing the straight perforator to the extent of seven inches, and then divided the stricture; after which I passed No. 4 wax bougie easily into the bladder. Since this time the urethra has been gradually dilated by means of the wax bougie, and No. 6 can be passed with ease.

This man had suffered from retention of urine on three occasions, on one of which the stricture had been divided by an opening made in the perineum. The opening in the perineum, however, never closed; the urethra had more the feel of cartilage than of the natural structure, and was contracted to the extent of several inches. Mr. Stafford has alluded to this state of the urethra at page 66 of the third edition of his work, where

he says:—"In some cases the stricture has occupied so great a length of the canal, and has been so extremely indurated, resembling cartilage more than any other structure, that I have been obliged to employ the instrument at several different times. When such has been the case, I have found, after making an incision into the stricture, that by keeping it open by a bougie, the hardened structure has become absorbed as far as the puncture has gone; and then, as fast as the contraction has been opened, the surrounding diseased structure has disappeared, and a healthy membrane, analogous to that of the urethra, has formed. Hence, when the whole has been permeated, the stricture, whatever length it may have been, has been nearly cured; and it has only required two or three introductions of the steel dilator to restore the canal to its natural size and structure." Excepting on the last occasion of dividing the stricture, the patient felt little or no inconvenience after the operation; and during the whole of the time he followed his usual occupation. The operations in this case were witnessed by Mr. Hocking, surgeon, of Penzance, and my pupil, Mr. Markwick.

[In the next case the smallest sized bougie could not be passed and the lancetted stilette was immediately resorted to, and the patient left London being able to pass No. 6 silver catheter for himself. Mr. Coulson then says:]

My object in publishing these cases is to assist in removing the feeling which too generally prevails against Mr. Stafford's treatment in cases of impermeable stricture; for nearly all who have written on the complaint more or less condemn the use of his instrument. In alluding to it, Sir Benjamin Brodie says:—"Mr. Stafford has invented an ingenious machine, which is intended to divide a stricture by means of a cutting instrument. If any cases occur in which this method may be useful, they are undoubtedly very few in number; and great caution must be required to avoid making false passages, which might be followed by effusion of urine and purulent deposits." These were the fears which unfortunately influenced me in rejecting for years this most valuable instrument. I say unfortunately, for I now recal to my recollection numerous cases in which I failed to afford relief for want of this or a similar instrument. I believe that there is much less danger of making a false passage with the lancetted stilette, carefully directed against an impermeable

stricture, than in the use of the common catheter or sound. As to the effusion of urine and purulent deposits, how rarely do they occur, in cases where great violence has been used, and lesion of structure has taken place in the attempts to introduce instruments into the bladder. In the use of Mr. Stafford's instrument, admitting that the division is not made in the direction of the canal, it is certain to be made *anterior* to the obstruction, and consequently not likely to be attended with infiltration of urine. In lieu of Mr. Stafford's operation, Sir Benjamin Brodie proposes the following modification, which he adopted in a patient, viz.:—"I then make an incision in the perineum, dilating the fistulous sinus, and laying open the membranous part of the urethra as far forward as the stricture, the exact situation of which was marked by the bougie. The bougie was then withdrawn; an instrument was then introduced in its place, consisting of a straight silver tube, closed at its extremity, except a narrow slit, through which a small lancet could be made to project, by pressing on a stilt which projected on the handle of the instrument; the round extremity of the tube being pressed against the anterior part of the left hand, introduced through the wound in the perineum and urethra to its posterior surface. The pressure of the instrument being distinctly communicated to the finger through the substance of the stricture, the lancet was protruded, and the stricture was divided. A silver catheter was then easily introduced through the urethra and divided stricture into the bladder, and allowed to remain there. The urine, of course, flowed through the catheter. At the end of two days the silver catheter was removed, and replaced by one of elastic gum. The wound in the perinæum gradually healed, and the patient ultimately recovered, making water in a full stream, and being able to introduce a sound of a full size into the bladder, so as to prevent a recurrence of the contraction."

Now the following is Mr. Stafford's plan. The single lancetted stilette, or urethral perforator, is passed down to the stricture, the exact distance of which from the extremity of the urethra is first ascertained. When the point of the instrument is arrived at, and rests upon the contraction (which is known by means of its graduation,) and is in an exact line with the natural course of the canal, the instrument is held and maintained in that position by the left hand, the fore-finger of which being passed through the ring on the under part of its handle, the

thumb of the right hand is passed through the ring on the handle of the stilette. The stilette is then pressed gently and gradually forward, when the lancet is protruded out at its point, and is thus made to incise the stricture. The lancet must be immediately drawn back, or allowed to retire into the sheath, by the action of the spring.

In the operation which is proposed by Sir Benjamin Brodie, as a modification of Mr. Stafford's, and as a substitute for it, an external wound is made in the perinæum for the purpose of preventing infiltration of urine, and next for the purpose of guiding the lancet.

I have already alluded to the little chance of infiltration of urine, and I know of no case in which it has occurred. As to guiding the lancet, I really think the instrument may be as safely guided when passed down the urethra, and held properly against the stricture, as by the finger introduced through the wound in the perinæum. The principle of the operation is Mr. Stafford's; the modification is the opening in the perinæum, which complicates the operation, inflicts additional pain, and prevents the patient, for a time at least, from following his usual avocations.

Mr. Liston, while speaking of Mr. Stafford's instrument, observes, "Here, again, is another contrivance of the kind, which is called a *lancetted stilette*. It is a catheter with a lancet, which can be made to protrude at its point. It is a very dangerous tool. Indeed, I do not know who would choose to have this introduced into his urethra. It must be a highly dangerous proceeding in the hands of any one, however dexterous he may be." I hope, however, that Mr. Liston's opinion has undergone a change; for I have been informed by a gentleman who witnessed the operation last year in the North London Hospital, that Mr. L. employed Mr. Stafford's instrument; and the same gentleman informs me that the patient is now quite well.

I will not, however, quote additional authorities to shew the feeling which exists, or has existed, against this plan of treatment: I only beg my professional brethren to put Mr. Stafford's instrument to the test of experience. I have this week operated on a man whose urethra was quite as much contracted as in the second case which I have related, and who assured me that it always took him five minutes to void his urine, and that the straining was so great as frequently to cause bleeding at the nose. By means of the straight urethral perforator, used three

times, I was enabled to get an instrument into the bladder, and the patient to void his urine with comparative ease.

I am not wishing to urge this plan of treatment in cases where there is any passage, however small, through the stricture; but in every case where the contraction is so great as not to admit of the introduction of an instrument, Mr. Stafford's plan, in my opinion, offers a safe, speedy, and effectual mode of cure.

Medical Gazette, July 15, 1842, p. 599.

48.—ON THE TOPICAL APPLICATION OF IODINE AND ITS COMPOUNDS.

By JAMES J. ROSS, M.D., Cambusmore, Sutherlandshire.

[The following observations on the topical application of iodine, although not possessing any particular claims to novelty, are so truly practical and useful that we shall abridge them as little as possible. No attempts at systematical arrangement are made: the principal preparations and forms of iodine are selected, and their efficacy, as topical agents in various diseases, detailed.]

Aqueous Solutions of Iodine.—There is a form of ulcer which we sometimes meet with, on the lower extremities of elderly persons (particularly women), where the whole limb is one hardened, condensed, discoloured mass, as if skin, cellular tissue, and even the muscular texture, were matted together by solid œdema. The ulcer is usually of great superficial extent, but not deep; its surface is hard, pale red, and without the least appearance of granulations; frequently, too, there is hypertrophy of the tibia:—for most of such cases are seen on the anterior and inner surface of the leg. Such ulcers, it is hardly possible to heal; but sometimes we shall succeed in diminishing their size greatly by the use of Lugol's stimulating washes (iodin. gr. ij, iij, or iv; iod. potassii, gr. iv, vi, or viij to water ℥i.), especially if we have previously used blisters over the sore, according to the plan of Mr. Syme.

Iodine may farther be used as a rubefacient or caustic, according to the formulas given by Lugol. The rubefacient consists of iodin. ℥iv, iod. potassii, ℥i, aquæ, ℥vi; while the caustic solution is formed of iodin. ℥i, iod. potass. ℥i, aquæ,

℥ij. From the quantity of the material required for these solutions, it is not likely they will ever come into extensive use, especially as there are other substances, which answer the purpose equally well, if not better.

Tincture of Iodine.—The tincture of iodine admits of far more extensive application. It consists of iodine ℥ij to alcohol ℥i. We shall proceed to consider some of its uses as a topical agent.

Some writers have lauded the local application of the tincture of iodine in erysipelas, as if its use were really a specific for the disease, and rendered all other treatment superfluous. I have used it in several cases, but in any instance of pure phlegmonous erysipelas, I have never seen it equal to the subduction of the disease, however early employed; and I suspect that those who delay the usual treatment by incisions, &c., in order to test its efficacy, will have reason, perhaps when too late, to repent their having done so. In slight erythema it certainly is of advantage,—allaying the burning heat of the part, producing a comfortable feeling, causing subsidence of any swelling from effusion, and hastening the superficial desquamation that commonly takes place; but, as already stated, that it has any power over the morbid action of genuine erysipelas, I cannot testify:—and I should farther be afraid, that those who venture to tamper and trifle with it here, will cause no small injury to their own reputations, and their patients' lives. In one case of œdematous erysipelas, however, in an old cachectic subject, I used the tincture of iodine locally, with the most marked advantage, together with regular bandaging. The limb daily diminished in size, the uneasy feeling of distension was soon relieved, and in a short time a perfect cure followed—constitutional treatment being, of course, pursued at the same time.

The mode of applying the remedy is to brush it freely, by means of a camel's hair pencil, over the affected surface every day, till it become of a dark brown colour, and some smarting heat be experienced by the patient. It very rapidly dries, and nothing farther is required. It is succeeded by rather a pleasant feeling of warmth, which lasts for some time, and desquamation of the cuticle takes place in a day or two. If used too strong in proportion to the delicacy of the patient's skin, small vesications may be produced, which prove disagreeable, but are of no farther consequence.

Another case, in which the local use of the tincture of iodine is of signal efficacy, is that of ulcers of the tonsils and fauces—specific or non-specific. I have seen the ugliest sores in this situation put on quite a healthy appearance in a few days under its use. It is highly recommended by Ricord, and certainly I do not know any thing equal to it in such cases. It is best used in the form of gargle; thus,

R_x Tinct. iodin., 3 i—ij; Tinct. opii., 3 i; Aquæ,
 ℥ vj. m.

Fiat. Garg. ter quaterve in dies utenda.

It may be made weaker or stronger, with or without the laudanum. It requires to be well shaken when used.

The first case in which I used it, was one of irregular phagedenic ulceration near the base of the uvula, with patches of a white exudation on the back of the pharynx; the voice, respiration, and deglutition being all affected. The general aspect of the patient was cachectic, but he denied ever having had syphilis. The above gargle was ordered. An improvement was observable on the third day of its use, which went on steadily and rapidly to a perfect cure. In another bad case of syphilis, with sloughing irregular ulcers on the velum and fauces, the local use of the same gargle (made first with 3 i to ℥ vj and afterwards increased to 3 iss,) arrested the phagedenic ulceration, and reduced it to a healing sore, which soon cicatrised. Patients do not complain of the gargle being disagreeable.

I may further mention a case of perforating ulcer of the palate, in which the undiluted tincture of iodine was used as an accessory remedial agent with good effect. The patient was a girl, aged 22; the opening was of the size of a goose quill in the soft palate, a little to the left of the mesial line, just behind the edge of the osseous palatal arch; no bone could be detected by the probe; her speech was considerably affected, and a portion of every thing she attempted to swallow escaped by the nose. There was no reason to suspect any syphilitic affection. On the 19th March the opening was touched with a red-hot wire; on the 23d the eschar came away, and the raw surface was now touched every second day with tincture of iodine. By the 13th April the opening had become much less; she spoke better and could also swallow better; very little escaping by the nose, and that only of any thin liquid, such as water. The

cautery was re-applied; on the 16th April the tincture of iodine was resumed as before; on the 25th the opening had still further diminished, and on the 13th May it was closed so that nothing came through it; the powers of speech and deglutition being also quite restored. In this case, after a raw surface had been produced by the separation of the eschar, consequent upon the application of the cautery, the tincture of iodine seemed powerfully to excite the granulating or reparative action. It might also, perhaps, be used in a similar manner in fistulous openings in other situations.

The tincture of iodine has further been used by pencilling, in various swellings, such as enlarged glands, buboes, nodes, &c. I have repeatedly, for a length of time, pencilled the skin over small indolent strumous glands in the neck, but I cannot say that ever I was sensible of any advantage from so doing. In chronic bubo, however, the same remedy, by producing a series of cuticular desquamations, has appeared to some to promote the resolution of the gland. In similar cases, Ricord uses compresses soaked in a dilute tincture of iodine, (Tinct. iodin. $\mathfrak{z}$ i; Aq. distill. $\mathfrak{z}$ ij,) which Mr. Langston Parker says "are very useful in the resolution of the chronic or indolent bubo."

There is a plan of treatment in cases where the centre of a large mass of indurated swollen glands suppurates, which I have often found very successful since I first saw it practised by Dr. Nicol of Inverness. A small lancet puncture is made in the central abscess, so as to discharge the contained matter; this opening is kept patent by the occasional introduction of a pointed piece of lunar caustic, and the whole surface of the surrounding hardened mass pencilled freely every day with the tincture of iodine.

With regard to the superiority of the tincture of iodine as an injection in hydrocele, over most others, nothing need be said, as I believe it is now universally used, and its efficacy testified on all hands. For this purpose $\mathfrak{z}$ ij may be added to $\mathfrak{z}$ vj of lukewarm water; the mixture should be made just at the time of using it.

The next instance we shall bring forward of the external use of tincture of iodine is in porrigo, or, more generally speaking, ringworm of the scalp, comprising all those affections, described as tinea, porrigo, eczema, impetigo, &c. The diagnosis of these various forms (which run one into another) is often ex-

ceedingly doubtful, and, what is of more consequence, their cure is often difficult, and frequently exhausts the patience both of patient and surgeon. Hundreds of applications have been used in the treatment of ringworm, and their very number proclaims their inefficiency; while in many cases, there can be no doubt, that the cure ultimately effected, ought rather to be referred to the natural dying-out, as it were, of the disease in course of time, than to the particular remedy in use at the moment. In such circumstances, then, we are all much indebted to Dr. Graves, who has laid down certainly the most successful plan of treatment I have yet had an opportunity of trying. He recommends as a precautionary measure, that, if the disease has been of long standing, an issue should be inserted in the arm, before attempting its cure. He condemns shaving the head, for it adds to the irritation of the skin, and the scalp can be sufficiently exposed by cutting the hair as closely as possible, with a sharp scissors. The next object is to remove the concreted scales, which lie over and conceal the diseased skin: this is to be accomplished by diligent ablution, without using any irritating degree of friction. We must next have recourse to some application, which will destroy the morbid secreting surface, or those vegetable fungi, which, according to some late observers, constitute the true pathology of the disease. For this purpose, Dr. Graves recommends either the tincture of iodine, or a solution of lunar caustic, or blue stone, 10, 15, or 20 grains to the ounce, as the case may require. Since reading Dr. Graves' paper, I have in several instances used the tincture of iodine, and have since been far more successful than before. "As to the application of this solution, or the tincture," continues Dr. G., "it will not do to apply it, as is generally done, with a camel's hair brush *for it must be strongly rubbed into each spot*, for which purpose a small bit of sponge, covered with fine linen, and tied to the end of a quill or slender stick, should be employed. When a large portion of the scalp is affected, it will require some perseverance to apply the lotion (or tincture) in an effectual manner. An application of this nature, when effectually done, must not be repeated oftener than once a-week. Immediately after it, the scalp must be covered with a spermaceti dressing, and the spermaceti must be renewed at least four times daily, so as to keep the head constantly moistened with it. The head is not to be washed

for three days after the application of the caustic, or the tincture of iodine, but then it may be well, but very gently, washed with yellow soap and water twice a-day; taking care to cover, as before, with a spermaceti dressing after each washing." The Doctor adds, "when the above precautions have been taken, the cure will advance rapidly, and each succeeding application of the caustic solution, or of the tincture, may be less severe." I have been thus particular in transcribing Dr. Graves's directions, as there is no disease more troublesome to the practitioner, and as, from experience, I can bear testimony to the efficacy of his mode of treatment, as above explained. The surgeon, when applying the iodine or caustic, should have his hands protected by gloves.

Another case, in which the local use of the tincture of iodine is very serviceable, is that of fluid effusion in joints. It is astonishing how rapidly it will sometimes cause hydrops articuli to disappear from the knee. Some have recourse to it in such cases at once, while symptoms of acute inflammation are still present; but, as a general rule, it will be advisable first to subdue these by the usual means; and then the tincture should be freely brushed over the whole surface of the joint every day. Its application should be preceded by friction with a flannel cloth, and after the tincture dries, a bandage may be applied, so as to make gentle pressure. I have seen Mr. Lizars use it in the same way, with excellent effect in dispersing copious effusion in the knee-joint, consequent on fracture of the patella.

Iodine Ointment.—The ointment of iodine itself is seldom used: and any remarks upon it will come better under the head of the hydriodate of potassa. I will only mention here, that a weak form of it is often of great use in removing bursal effusions or ganglionic swellings, applied as a dressing to the cutaneous surface, previously rendered raw by a blister. The common strength of the ointment is $\mathfrak{D}i \text{ } \mathfrak{z}i$ of axunge.

Such are all the remarks we have to make on the topical application of iodine in its elementary form. We shall next proceed to the iodide of potassium, or hydriodate of potassa.

Iodide of Potassium.—It will be seen above, that this salt enters into the composition of the aqueous solutions of iodine; indeed, it is necessary to keep the iodine in solution, as it is very insoluble in water. But the most common form for its external

use is that of ointment; and one of the best formulæ for this purpose is the officinal one in the last Ed. Ph., viz. iodine 3 j, iodide of potassium 3 ij, lard $\frac{3}{4}$ iv. I would here remark as to all ointments of hydriodate of potassa, that, as often procured from apothecaries, they are unfit for use, from their containing a quantity of gritty particles of the salt; therefore the recommendation of the London College seems important, which orders the iodide to be first triturated with a little spirit, before adding the lard. Care should be taken, too, that the lard be fresh. When the iodide of potassium is used alone, the ointment may vary in strength from 3 ss to 3 iss, to $\frac{3}{4}$ i of axunge.

1. The ointment has been very extensively used in cases of enlarged strumous glands. A portion is rubbed over the skin of the part every morning and evening, for ten or fifteen minutes each time. The strength of the ointment, and the degree of friction, must be regulated by the circumstances of each case. Where there is redness of skin, or much tenderness to the touch, it should never be employed; and if, during its use, these should appear, it must be intermitted, till, by warm fomentations and soothing measures, they be overcome. Cases of such diseased glands are common enough, and trials of its efficacy are therefore easily made by all. Some have lauded it to the skies, while by others it has been unjustly depreciated. It is probable, that as usual, truth lies "in mediis rebus." That it has some power in exciting absorption of hardened glandular masses—that it will, as it were, dissolve large condensed tumours of this kind, and break them up into separate nuclei—cannot be denied; but its power of completely dispersing these nuclei, I am not disposed to estimate very highly. I have almost invariably been disappointed with its effects over the enlarged glands of strumous patients; and I cannot help believing, that much more of the result, when this has been favourable, is to be attributed to the iodic preparations, which are generally exhibited by the mouth at the same time, than to the local medication by the ointment in question. I am well aware that this opinion is contrary to that of many others; still many will coincide with it; and, at any rate, I give it as the result of my own experience.

2. The ointment of hydriodate of potassa has been used to excite the absorption of all kinds of tumours. It is an excellent application to those chronic indurations which remain after

any local attack of inflammation, and that thickening of parts which is left after the healing of an abscess. It may be serviceable in hernia humoralis, but perhaps not so much so, as the camphorated mercurial ointment. In the case of those tumours which are usually subjected to the knife, little can be expected from it, though its use, with occasional leeching, may be first employed. This mode of treatment will sometimes cause the disappearance of those small, moveable, painless tumours, which are often seen in the mammæ of young females. In tumours of internal organs, as the liver, ovary, &c., the Edinburgh ointment is one of the best means of local treatment we have, alternated with leeching and blistering. In one case of enormously enlarged spleen, occurring in a boy aged five and a half years, the hyd. potass. ointment was of signal efficacy in reducing its size; but abdominal effusion took place, and the patient sank. However, by external examination, it could be discovered that the spleen, which had at first nearly filled the left side of the abdomen, extending from below the ribs forwards to the mesial line, backwards to the lumbar region, and downwards to the iliac region, had become so diminished, that ultimately, at the period of death, it felt no larger than a doubled fist. Internal treatment was of course resorted to at the same time; but the reduction of size became much more marked, and proceeded much more rapidly, subsequent to commencing the ointment.

The same application may also be used in ovarian disease, in conjunction with other means; but I cannot testify to its efficacy, as such cases too often defy all our remedial agents.

3. The iodide of potassium has been used externally in almost all cutaneous diseases. From some experiments lately made with regard to its destructive power over the itch insect, it has been recommended for the cure of scabies. M. Schedel states, that the speediest cure of this complaint is effected by an ointment containing 3 ss to ʒ i of axunge.

Dr. A. T. Thomson recommends an ointment composed of hyd. potass. 3 iss, to axunge ʒ iss, with tinct. opii ʒ i, in lepra: this, conjoined with appropriate internal treatment, has a very good effect; but, from a comparative trial, I think it inferior to another ointment recommended by the same author, viz.,

R̄ Calomelanos ʒ i; Unguent. Picis ʒ iv; Unguent Cetacei ʒ i. m.

Either of these cannot, of course, be held up as capable of curing lepra; but, from cases treated with and without their aid, I think that they decidedly hasten that desirable result.

I have tried the ointment of this same substance often in porrigo, but cannot report favourably of its results; at all events, it by no means equals Dr. Graves' treatment by the tincture of iodine, already detailed.

We shall next take up the iodide of sulphur.

Iodide of Sulphur.—1. This substance has been much vaunted of late for the cure of porrigo. Dr. W. J. Erasmus Wilson recommends the head in such cases, after ablution with warm water, to be rubbed gently, twice a-day, with the following:—

R $\bar{c}$ Iodid. Sulph. 3 ss; Ol. Olivar. 3 i.

This salt is also recommended by a reviewer in *Johnson's Journal* (Jan. 1839, p. 156), as beneficial, particularly in porrigo decalvans, made into an ointment with eighteen or twenty parts of lard, and rubbed on very gently night and morning. Dr. Davidson of Glasgow has also made a report of his experience with regard to it in a late number of this Journal.* He uses it from $\mathfrak{I}$ i to $\mathfrak{I}$ ii, to 3 i of lard, applied generally once, in some cases twice a-day, after shaving the head. He states it to be the most efficacious of all the external remedies he has tried. A writer in *Johnson's Review* for Jan. 1842, p. 268, noticing Dr. Davidson's report, also testifies to its merits, from his own observation for the last two or three years; he uses a much stronger ointment, 3 i of the iodide to 3 vii of lard, and has found it, on the whole, more serviceable than any other application. I have used an ointment of it, $\mathfrak{I}$ i to 3 i in a few cases, as well as Dr. Wilson's oily formula, but not with the good effects represented above. However, my experience of it has been limited, as just stated, to a few cases, and, therefore, I have no data on which to found an opinion of its efficacy; and farther, since I became aware of Dr. Graves' treatment by the tincture of iodine, I have seldom had occasion to have recourse to any other.

2. Dr. Davidson, in the same report, states his experience of its use in lepra and psoriasis. "The iodide of sulphur," he says, "does not seem to have so much power over lepra and psoriasis

* See Retrospect No. V., page 162.

as over porrigo, although, in his experience, it has succeeded more frequently than any other agent he has tried, with the exception of blistering by cantharides."

3. I used the iodide of sulphur very successfully in a bad case of sycosis menti. After soothing the irritation by extracting the hairs from the pustules, by poultices, prussic acid lotions, and warm poppy-head fomentations, an ointment of gr. xv to the ounce was used by gentle friction morning and evening. In ten days the tuberculated indurations covering the chin were much smaller, and ultimately a complete cure was effected.

Iodide of Mercury.—1. An ointment of iodid. hydrarg. $\mathfrak{Z}$ i to $\mathfrak{Z}$ iss of lard is extremely serviceable in various syphilitic ulcers, particularly those indolent greyish regular sores, which are seen on the arms and legs of venereal patients, and those which are left on the separation of the concreted scurvy cutaneous tubercles, which are met with on the face in bad cases. The above ointment is one of the most effectual applications for such sores that I have seen used. It is applied in the usual manner,—spread on lint.

2. An ointment of this substance may be used, like the other preparations of iodine, with the view of causing the absorption of various tumours. Ricord uses it in this way for chronic indolent bubo.

Iodide of Lead.—An ointment of this salt— $\mathfrak{Z}$ i to $\mathfrak{Z}$ i of axunge—may sometimes be of service in various strumous sores. It has also been used by friction against different tumours, and to excite absorption generally. But I am unable to say anything of its efficacy from personal observation.

Iodide of Zinc.—The first notice I saw of the medicinal use of this compound was in the review of Dr. Cogswill's Essay on Iodine, in *Johnson's Journal* (Jan. 1839, p. 118.) It is there stated, "During the last two years we have been in the habit of employing a strong solution of the iodide of zinc, as an application to the tonsillary glands, when affected with chronic enlargement, and we can recommend it to our readers as the best local remedy we know for that most obstinate complaint." To this statement I fully subscribe. In those cases of hypertrophied tonsils where I have used it, the diminution in their size was most marked and speedily produced. In two patients in whom these glands were so much enlarged as almost to fill up the isthmus of the fauces, and interfere materially with deglutition, they

were quickly reduced to nearly their natural size, and gave no farther inconvenience. A solution may be made of 10, 15, or 30 grains to the ounce of water, and applied to the tonsils daily, by a piece of sponge tied to a quill or thin piece of wood. After using this for some time, I employ the substance itself, undiluted; a little of it is exposed to the air till it deliquesces, and then applied in this state to the tonsil, by means of a camels-hair brush. This is a much more effectual plan than Dr. Cusack's mode of applying the nit. argenti point by point; indeed, it is superior to every local application I know of being used in such cases, always, of course, excepting the knife.

The last preparation of iodine which we mean to notice is one very little known—the iodide of arsenic.

Iodide of Arsenic.—The first time I had an opportunity of seeing this substance used as a local application, was in a case of lupus, extensively affecting the nose and upper lip. It was ordered by Dr. J. J. Nicol of Inverness, and with excellent effect. Three grains were made into an ointment with $\frac{3}{4}$ i of lard, and a portion applied daily to the sore, spread on lint. The surface soon became of a dark iron-grey colour; in fact, sloughed and formed an eschar. When this slough came away, it left below a healthy sore, which soon healed under the black wash. During the progress of the case, one or two spots showed signs of progressive ulceration, but by a timely application of the same ointment, their action was changed in the same way, and at last the whole affected surface cicatrized.

2. Another instance where this ointment is of a very great importance, as an escharotic, is in the case of thickened spongy softened bone, where an ulcer exists over the diseased part, and covers it with large vascular granulations, which, in such cases, grow very rapidly. Now here it is often an object to remove these granulations, in order to treat the affection of the bone; but as the patients are usually scrofulous, debilitated, young subjects, the loss of blood attending shaving off these by the knife cannot well be borne, and cannot fail of being injurious both to the local action of the part affected, and to the general energies of the constitution. By the use of the ointment of iodide of arsenic (gr. iij to $\frac{3}{4}$ i), their removal may be thoroughly and safely effected. It is applied like common dressing, twice a-day, till the surface becomes dark-coloured and dry; a thick cake is formed, which begins to rise all round the edge; when this takes

place, poultices may be applied till the whole slough is thrown off, or the loosened and raised portions of its circumference may be clipped off with scissors. The ointment gives no pain, and its action extends pretty deep. If the first slough does not expose the bone, a new application must be made.

3. I have no doubt that a weaker ointment might be used as a stimulant in ordinary ulcers. No fears need be entertained from any idea of the arsenic being absorbed.

London & Edin. Monthly Journal of Med. Science, Sept. 1842, p. 792.

49.—TREATMENT OF SYPHILIS BY TARTARIZED ANTIMONY.

By ALFRED SMEE, Esq, F.R.S., Surgeon to the General Dispensary, Aldersgate Street; to the Bank of England, &c.

The employment of tartarized antimony for the cure of syphilis, in the peculiar way in which I now recommend it, occurred to my mind from noticing the effects of that potent remedy in removing various other diseases. The effect of tartarized antimony upon the system is rapid, and is very different when administered in different ways. If given in large doses it produces great effect upon the stomach, irritating that organ, exciting it to vomiting, and, from its action thereon, reacting upon the brain and nervous system. This mode of administration is very well where we desire to cause syncope for the purpose of reducing a dislocation, but this kind of action is precisely the one which we have to avoid when the remedy is given for the cure of syphilis. In this latter case, we give very small doses frequently repeated, so as to charge the system with the remedy, which then appears to irritate the capillary system and incite it to action: the whole excretory apparatus of the entire body being then irritated in the same way as the stomach in the former case, strives to throw off the new agent, and with it practically we have reason to believe that the syphilitic poison is ejected.

As a general rule, most patients labouring under syphilis, except, indeed, it be a sloughing phagedena, violent inflammation, or some such analogous case, no matter what form or duration, primary or secondary, provided the party be otherwise robust, or at any rate, not in very ill health, will be benefited by the antimonial treatment. The medical man begins, if

necessary, by ordering an aperient of colocynth, jalap, black draught, or similar purgative, and then directs the patient to take from 20 to 60 drops (30 medium) of antimonial wine, or the solution of antimony, every two or three hours regularly, and in every case where pus or a puriform discharge exists, use at the same time a lotion of chloride of soda, the strength of which should be regulated to the sensitiveness and delicacy of the part of the body affected.

This treatment I have seen to be efficacious in arresting the progress of the disease at the very commencement, when nothing appeared but four or five little red spots, which produce consequences, when left to their own course, that every surgeon well knows. In these cases the antimony should be used for three or four days, or even a week, till all redness and lividity are quite removed.

In simple sores, either of the prepuce or glans, the treatment is extremely efficacious, and here had better be conjoined with a solution of chloride of soda, containing about an ounce of the latter to a pint of water, which should be applied two or three times the first day. In many cases, in twenty-four hours the character of the sore becomes changed; the surface is no longer covered with white pus, a healing edge begins to show itself, and the sores, perhaps three, four, or more, are speedily healed. As soon as the character of the sore is changed, the part had better only be dabbed once or twice a day with the lotion, and at other times simply covered with a piece of dry lint; for we may be sure that here, as in all other cases, too much disturbance of a healing part only interferes with the natural healing process. Superficial sores will frequently, although of three weeks' or a month's standing, be healed in four or five days; but it is prudent to continue the antimony till not only the surface of the skin is not in the slightest degree raised, but even till the part affected assumes its natural colour.

The treatment of indurated sores is similar in all respects to that of superficial sores, and indeed that slight puffiness always to be seen round the most superficial sore is perhaps to be considered as a slight induration, and the dense cartilaginous hardness which occasionally presents itself is nothing but the same thing differing in degree rather than in kind; and we have the authority of some most eminent surgeons, in confirmation of universal experience, that either produce indifferently secondary

symptoms. The rapidity with which the cure is effected in these cases is proportionate to the degree of hardness. If the induration is moderate, the sore may heal, but the induration will remain; in which case the person is by no means to be considered as cured, for the antimony must be continued not only till the sore is cured but till the induration is removed. If the induration is very intense and hard, the sore, although healthy, will not heal till that is absorbed. In all these cases the antimony should be given very frequently at the commencement, and with the utmost regularity; for the remedy always produces the greatest effect on its first administration, and seems rather to lose its power after many days, for which reason it should be gradually increased in quantity.

Phagedenic sores generally occur in poor weakly constitutions, and require peculiar treatment on that account. The employment of antimony in these cases acts decidedly as a mild tonic; but still, as its excreting effects seem to exceed its tonic powers, we find it advisable in these cases to conjoin the use of the remedy with that of other more potent tonics. If, indeed, the skin is cold and clammy, we should use such remedies as experience has taught us determine the blood to the surface, for a few days previous to the employment of the antimony. A grain of sulphate of quinine may be given twice or thrice a day. A grain of proto-sulphate of iron, or a grain of sulphate of zinc, may be used with great advantage for the same purpose; and the antimonial drops exhibited as before. If the patient is but slightly feeble we may begin at once with the following mixture:—

R̄ Zinci Sulphatis, gr. v.; Aquæ Dist. ʒ ss.; Vin. Ant. Pot. Tart., ʒ ss.; quâque 3 ss. vel. 3 j. pro. dose 2da vel tertia hora sumenda.

Proto-sulphate of iron may be substituted for the zinc with similar success. If the patient is restless or sleepless, or the nervous system much affected, the addition of about twenty or thirty minims of syrup of poppies, or a few drops of laudanum to each dose, is of much service. A little Dover's powder may be given at bed-time. Whenever iron is employed it appears to be essential that the metal should be in the state of the protoxyde; for probably the persalts have but very little action on the system, and even that little action may be dependent upon

a portion of the salt giving up one equivalent of oxygen. The nature of the salt of iron, provided it be a proto-salt, does not seem to influence the result.

In all cases where the patient is feeble, he should be desired, immediately he leaves his bed in the morning, to rub his entire body with a coarse towel till the skin is red, which will further help to promote a proper flow of blood to that important organ.

Buboes give way to antimony perhaps more rapidly than they do to mercury, and a more favourable prognosis may be given if this treatment be adopted. It would, however, be vain to attempt the removal of an inflamed bubo containing a large quantity of pus, by any general means.

Various eruptions of the skin, the sequelæ of syphilis, as a general rule, yield favourable and rapidly to antimony.

Ulcerations of the pharynx, uvula, and roof of the mouth, yield rapidly to this line of treatment. It is a good plan to use a gargle containing from ʒj. to an ʒj. of chloride of soda to the pint of water, as that much facilitates the favourable termination of the disease. The ulceration, in these cases, rapidly loses its white layer of pus, frequently mistaken for lymph or sloughs; and as soon as a perfectly healthy surface is established the ulcer heals as rapidly as a common sore.

Ulcerations of the corners of the mouth and tongue, and a peculiar growth of the papillæ of that organ, yield rapidly to this line of treatment.

Syphilitic affections of the testicle, rhagides digitorum, &c. yield rapidly to this plan.

Of the value of antimony in syphilitic iritis and nodes I do not happen to have had any experience.

Such is a rough and brief sketch of the cases in which antimony has produced such good results; and if we compare this remedy with mercury we shall perceive that it is entitled to the preference, in all cases in which it is applicable, and this for several reasons. In the first place, mercury takes two, three, four, or more, days before its general excretory effects manifest themselves; and previous to that time a marked and powerful stimulating effect is produced. The period of its excitement might be justly called the exciting period. This excitement, or stimulating property, increases from the commencement of the administration of the mercury till the period of salivation, just before which it is at its maximum. The exciting period is al-

ways shorter, but more violent, in direct proportion to the amount of mercury; and if very small doses be given the period is probably prolonged in length, but diminished in violence; and sometimes, in these cases, it is barely distinguishable. If two grains of calomel, and a third of a grain of opium, be given every six or eight hours, the effect is at its maximum on the second or third day, whilst its excretory and absorbent properties begin to manifest themselves on the third or fourth day. According to this view of the case, mercury given in large doses does harm to the patient on its first administration, gradually increasing the symptoms until it reaches the maximum excitement, when the same remedy alters its effects, and causes absorption and excretion. This fact is invariably seen, either in iritis, inflammation of the lungs, or peritonitis, when treated by this remedy; and hence arises the frequent necessity for bleeding before the administration of the remedy, and the frequent apparent, and even real, necessity for its repetition, either general or local, at the maximum excitement. In practice we should endeavour, as far as circumstances will permit, to cheat the remedy of this baneful effect by introducing it very gently and carefully into the system; and we find that nearly every case will yield to such a gradual administration of the remedy. In some degree the excitement is governed by the nature of the mercurial compounds, the oxides appearing to act more gently, and with less stimulation, than the chlorides, &c. Whether the remedy is taken in by the stomach, the skin, or by fumigation, it does not seem much to matter; by the former mode, however, the effects of the remedy are far more easily controlled; for the absorption of the remedy by the latter is uncertain in amount. Sometimes the combination of small quantities of antimony with the mercury lessens the degree of excitement. The evidences of the exciting period being at hand are, additional pain, heat and redness in the inflamed part, but more especially by a large increase to the deposition of lymph, and a considerable additional impairment of the function of the organ. Moreover, the system is much disturbed, the patient is restless, sleepless, feverish, and generally in a most uncomfortable state. As the intensity of salivation and absorption are directly proportionate to the intensity of excitement and stimulation, it would be unwise, when we thoroughly understand the nature of this excitement, to lower the system by an abstraction of blood, if that can possibly be avoided.

If antimony be compared with mercury in the above properties, a vast difference is seen between them ; for the first remedy appears to excite excretion within two or three hours of its first administration : the effects of mercury, however, gradually increase with the administration of the medicine, which appears to accumulate and remain in the system, whilst that of antimony seems, by long continuance, to lose in some degree its power, requiring an increase of the dose. If we look at the unpleasant effects of mercury, its salivation, destruction of the teeth, sloughing, erythismus, &c., the contrast is also most striking ; for I never saw antimony, in any case, produce poisonous symptoms, whilst every surgeon, even of but limited experience, must have seen frequent cases of death from the use of mercury, and sometimes even from very small doses.

The comparison between the action of tartarized antimony and iodide of potassium I feel hardly in a condition, at the present time, minutely to consider ; but there are many unpleasant effects of this too-much-hackneyed medicine on the mucous, and perhaps even on the serous membranes, and, moreover, the remedy seems to remain in the system for a long period.

The treatment of syphilis by tartarized antimony, if compared with the pil. panis systems of some modern surgeons, is most remarkable. I once had the opportunity of observing the latter practice upon a great variety of cases ; and the duration of the disease appeared to be, as far as could be judged, more than treble, quadruple, or even a much higher multiple of the time required when moderate doses of mercury were administered. When, moreover, we consider that the antimonial, as a whole, may be considered more favourable than the mercurial treatment, the difference between bread (*i. e.* doing nothing) and antimony is remarkable.

The use of tartarized antimony is even more conspicuously shown in the middle than in the lower classes of society : for in the former cases the excreting apparatus is far more easily set in action, from which cause rather smaller doses may be administered ; and it is a fact well worth recording, that antimony has a much greater tendency to cause vomiting or nausea in the morning than at any other period, for which reason the dose may be reduced to one-half at that period. The plan of treatment which appears to be most eminently successful is that by which a large quantity of the metallic salt is introduced into

the system without any immediate effects by the means of its introduction.

The diet of the patient must be modified according to circumstances: a spare diet, as a general rule, is to be preferred, without spirituous liquors of any kind; but if the patient be feeble, nourishment or stimulus must be given, and there is no object in materially depressing the patient's strength in any case, though it would be advisable to keep him below what is termed rude health.

To ascertain the effect of antimony in entirely removing the syphilitic virus and preventing secondary symptoms, will necessarily be a work of time; but when we consider that antimony is a most potent remedy for removing the sequelæ of syphilis, how forcibly is the probability of a complete eradication of the disease presented to our minds. There are some creatures, indeed, who, unmindful of the lessons they learn, receive contagion upon contagion. In these cases we can easily conceive, that when a second or third disease is caught before the first is healed, and superimposed upon it, and the patient is always incurring fresh risks, that some portion of the sum of all his distempers would lurk about him for ever.

The principle of the employment of tartarized antimony is probably the removal of the poison from the system, and whenever any offending matter has to be removed from the human body, the general plan of treatment for syphilis is admirably adapted. For all forms of scrofula, where the matter may be regarded as a poison formed, though not taken into the system, it is invaluable. In all forms of impetigo and encrusted sores of every kind, which are quite analogous to scrofula, the rapidity with which such a treatment effects a cure is truly marvellous. Exaggerated cases of herpes yield with extraordinary rapidity, ten days or a fortnight being sometimes sufficient, in cases where the duration of former attacks had been two or three months, to effect such a complete restoration of the normal functions of the skin, as to leave no signs of a disease having existed. Sometimes a furuncular diathesis, where there is a great tendency to boils over the whole body, yields to such a line of treatment, when all other plans have failed. Even in cases of affections arising from the absorption of other metals, the treatment is of

much value, for I lately had a case of paralysis agitans from the absorption of mercury which yielded steadily and rapidly to antimony and tonics.

Medical Gazette, October 7, 1842, p. 45.

50.—STRANGULATED HERNIA TREATED BY EXHAUSTION
THROUGH THE ELASTIC TUBE.

By C. S. WEBBER, Esq, Orford.

[In Article 40, of our first Volume, is related the experience of Mr. Maunder in introducing an elastic tube up the rectum in cases of strangulated hernia. We have no doubt that the principle is excellent, and we should only doubt the safety of pushing the tube twenty-six inches up the bowel. Cases, however, are advanced, which prove that the practice was unattended with danger; and therefore, we should again repeat, that the operation ought to be attempted before ulterior measures are adopted.

Mr. Webber of Orford, relates a case where he succeeded in the way recommended by Mr. Maunder; that he endeavoured to produce a vacuum below the stricture by the exhausting power of the syringe. The tumour, which occupied the scrotum, was of the size of a goose's egg, remarkably tense and unyielding, with all the symptoms of strangulation. The taxis was diligently and carefully applied for about twenty minutes without success; the patient was then bled to syncope, and the taxis again had recourse to, followed by the application of cold to the tumour, and such other remedies as circumstances permitted. Before having recourse to an operation, Mr. Webber resolved to try Mr. Maunder's plan, which he did as follows:]

A common enema having been previously administered, I introduced the œsophagus tube of Weiss's stomach-pump with tolerable facility, until it arrived (as nearly as I could judge) at the sigmoid flexure of the colon, where it encountered some degree of resistance, which yielded, however, in a short time, to moderate pressure, after the injection of a little cold water. The tube was now passed gradually up until its whole length, about twenty-five inches, had been introduced, the brass extremity alone remaining without.

After waiting a quarter of an hour, between two and three pints of water were thrown up and retained in the bowel for a short period; the cylinder of the pump having been unscrewed from the elastic tube, and the mouth of the latter closed by the thumb, on withdrawing which the fluid repassed in a jet of considerable force. The cylinder was now readjusted to the tube, and the action of the machine being reversed, the piston was worked rapidly with the view of producing a degree of exhaustion or partial vacuum in the intestine; gentle taxis was at the same time resumed, and after the expiration of four or five minutes (during the latter part of which the patient complained of a sensation of bearing down referred to the whole abdominal region), I had the satisfaction to feel the contents of the tumour recede from beneath my fingers, and slip into the abdomen with the usual gurgling which accompanies the return of intestine.

The man recovered without an untoward symptom, and was removed to his father's house at Wickham, a distance of about nine miles, on the third day afterwards.

I am disposed to attribute the successful result of the foregoing case, in a principal degree, to the production of a partial vacuum in the intestine immediately below the seat of strangulation, by the exhausting process, that being the direct agent to which the obstruction appears to have yielded; and I am induced to recommend a trial of this measure to the profession as an adjuvant to that valuable instrument, the elastic tube, in cases where the latter alone may prove inefficient.

I have since reperused Dr. O'Beirne's excellent work on Defæcation, with the view of ascertaining whether exhaustion through the tube had been adopted in any of his cases. I cannot discover that the doctor has availed himself of this expedient, although a case of constipation is cited by him in which Dr. Duguid, of Kirkwall, in Scotland, introduced an elastic tube into the colon with the effect of discharging an accumulation of fæces; and I observe that this gentleman attempted to exhaust with the view of overcoming the resistance, he experienced to the passage of the tube at the sigmoid flexure, but unsuccessfully, which circumstance induced him to undervalue the measure. There is, however, another case which seems to have suggested to Dr. Duguid the use of the tube, and which is reported in the Medical and Physical Journal, for December,

1827, being communicated by Dr. James Johnson, as having occurred in February, 1826, in the practice of Dr. Alexander, of Genoa, who appears to have employed exhaustion through a hollow bougie, after twelve days of constipation, and the failure of tobacco enemata and various other remedies, with complete success. This case, which is a very interesting one, seems to have excited but little attention.

I cannot conclude without expressing my conviction (in nearly the words of Dr. O'Beirne, who uses them, however, with reference to the tube only) that no surgeon is justified in proceeding to the operation for strangulated intestinal hernia, without having previously given a fair trial to the measures above alluded to.

Lancet, May 28, 1842, p. 304.

51.—OPERATION OF AUTOPLASTY FOR THE RELIEF OF CONTRACTION FROM BURNS.

By THOMAS MUTTER, M.D., Professor of Surgery in Jefferson Medical College, Philadelphia, &c.

[The patient, an adult, upon whom the following operation was performed, received a severe burn when five years old, by her clothes taking fire, and, at the time this is related, she had been unable to throw her head back to the left side or backwards, or to close her mouth for more than a few seconds for 23 years. Her right eye was also drawn down some distance below the other, and when she endeavoured to turn her head it was entirely closed. The clavicle on the right side was completely embedded in the cicatrix, and the chin, from the shortness of the bands, was drawn down to within *one inch and a half* of the top of the sternum; the space between the chin and the sternum was also filled up by the cicatrix. The following operation was performed:—]

The patient being placed in a strong light, and seated on a low chair, her head was thrown back as far as possible, and sustained in this position by an assistant.

Seating myself in front, I began the operation by making an incision which commenced on the outside of the cicatrix in *sound skin*, and passed across the throat into *sound skin* on the opposite side. This penetrated merely through the integuments, and

was made as near the centre of the cicatrix as possible. It was therefore about three quarters of an inch above the top of the sternum, and of course in the most vital part of the neck. My object in making it so low down was to get at the attachments of the sterno-cleido-mastoid muscles, which in consequence of the long flexion of the head, were not more than three inches in length, and required on one side *complete*, and on the other *partial* division, before the head could be raised. The integuments having been thus divided, I next carefully dissected through the cicatrix until I reached the fascia superficialis colli, which I could readily detect, and then going on still deeper, I exposed the sterno-cleido-mastoid muscle of the right side, and passing a director under it, as low down as possible, divided both its attachments. This enabled me to raise the head an inch or two; but finding that it was still kept down by the sterno-cleido-mastoid of the *left* side, I divided the sternal attachment of this muscle, and was much gratified to find that the head could at once be placed in its proper position, the clavicular attachment of the muscle offering little or no resistance. A most shocking wound *six inches in length by five and a half in width*, was thus made, and yet there was scarcely any hemorrhage; three or four vessels only requiring the ligature.

The next step in the operation consisted in the detachment of a flap of *sound skin* with which this chasm could be filled; for I knew very well, that if permitted to heal by granulation only, the patient, so far from being benefited, would be made worse than before. To obtain this flap, I commenced at the terminal extremity of the incision, and carrying the scalpel *downwards and outwards* over the deltoid muscle, dissected up an oval piece of integument *six inches and a half in length by six in width*, leaving it attached at the upper part of the neck. This dissection was painful, but not bloody, only one small vessel being opened. The flap thus detached was next brought round by making a half-turn in its pedicle, placed in the gap it was destined to fill, and carefully attached by several twisted sutures, to the edges of the wound. Several straps were then applied to support the sutures, but no other dressing was deemed advisable. The edges of the wound on the shoulder from which the flap had been removed, were next brought together by straps and sutures, and with the exception of its upper third, was completely covered in. A pledget of lint moistened with warm water

was laid upon this raw surface, a bandage applied by which the head was carried backwards and maintained in this position, and the patient put to bed. The fortitude with which this truly severe operation was borne excited the admiration of all present. Scarcely a groan escaped the patient, nor was it necessary to give her more than a mouthful of wine and water during whole period of its duration.

Rest and quietude were enjoined, and the patient prohibited from taking any kind of nourishment, in order that adhesion or union by the first intention might be accomplished.

[No unfavourable symptoms made their appearance, and union by the first intention took place. The patient was relieved of nearly all inconvenience : and twelve months after the operation no contraction in the flap had taken place. Other cases are related which were likewise successful. Dr. Mutter concludes a very able paper on the different means of relieving cicatrices caused by burns and other injuries, by making the following observations on *Autoplasty*, which in these cases has been found of signal service. He says :—]

The operation, which of all others, is most entitled to our confidence, especially in cicatrices of the neck, cheek, eyelids, nose, lip, is that in which “*autoplasty*” is brought into service. In all such operations, we are governed by the same principles, and pretty much the same mechanical details. They consist in,

1. Dividing the cicatrix so as produce a raw surface, in some part of its extent; or cutting it out entirely, as proposed by Hildanus.

2. In applying to this raw surface a piece of healthy skin taken from the neighbouring parts.

3. In attaching this skin by suture to the margins of the wound in which it is inserted.

4. In approximating the edges of the wound, from which the skin has been removed.

5. In separating, by appropriate agents the parts too closely approximated, and keeping them in this condition, some time after the flap has united.

6. In applying oleaginous frictions, and motion to the new made parts to give them flexibility and softness.

Many shocking deformities from burns have been relieved by the performance of operations conducted on these principles; for

example, the eyelid, the cheek, the nose, and the lip have all been restored; but I believe I may claim the merit (if merit there be in adapting an old principle to a new operation,) of having first performed an operation of the kind for the relief of extensive cicatrices of the throat.

The American Journal of the Medical Sciences, July, 1842, p. 67—79.

52.—COMPLETE ANCHYLOSIS CURED BY OPERATION.

By WILLIAM GIBSON, M.D., Professor of Surgery in the University of Pennsylvania. Reported by THOMAS L. WALKER, M.D.

[We believe the following mode of operating in cases of ankylosis was first devised and executed by Dr. J. Rhea Barton. He performed it in cases where the joint was completely disorganized, and where there was a firm osseous adhesion between the ends of the bone, giving rise to most complete immobility.

He reported his first case in the *North America Medical and Surgical Journal* for April, 1827. It was performed on the person of a sailor whose hip joint was perfectly ankylosed, and the limb so situated as to overlap the unaffected one. The thigh bone was divided with a saw, through the great trochanter and a part of its neck. This being done, the limb was readily straightened, and bony union having been prevented by daily movement of the limb, ligamentous attachments were formed, and an artificial joint resulted. After the lapse of sixty days, the patient stood erect upon his feet, and finally did well, having a very tolerable use of his limbs. In 1838, Dr. Barton published another similar case where the knee joint was the part affected, and will be best illustrated by the details of a case recently published by Dr. Gibson.

The patient, James Johnson, æt. 17, was admitted into the Philadelphia Hospital. An injury to the knee two years previously by means of an axe, had completely destroyed the use of the joint. The leg was fixed backwards towards the thigh, so as to form angle much less than a right angle with the thigh. A careful examination satisfied Dr. Gibson that the parts belonging to the joint were all destroyed: ligaments, cartilages, and the synovial membranes, and that it was a case of complete ankylosis. The following operation was performed:]

Nov. 17th, 1841.—The patient having been for several days

restricted in his diet, was brought forward, prepared for the operation. Before a full attendance of medical students, and many eminent physicians, the proposed operation was explained by Dr. Gibson; after which, he proceeded as follows:—Two incisions were made, as in the operation of Dr. Barton; the first extending from the outer to the inner side of the limb, and passing immediately above the patella; the second commencing on the outer side, two and a half inches above the first, and meeting it at an acute angle on the inner side. These incisions penetrated to the bone, engaging the integuments, the tendon of the extensor muscles, and some of the fibres. The soft parts included between the incisions being dissected off and turned back, the bone was exposed to view. A portion of the femur, of a wedge shape, was then removed with the saw, having a base upwards of two inches and a half anteriorly, and reaching to within a few lines of the posterior surface of the bone. The operation was then concluded by inclining the leg backwards, which caused that portion of the bone's diameter, undivided by the saw, readily to yield, and the solution of continuity to be made complete. This method of accomplishing the separation of the bone, was regarded as an important step in the operation, inasmuch as it guarded the popliteal artery against wounds from the saw; and the dovetailed edges of the opposed surfaces were influential in fixing the extremities of the bones, until the asperities of these surfaces were removed by absorption, or by the formation of new matter. No blood-vessels were divided requiring the ligature or compression. The operation was completed in a few minutes, and the flap being returned to its place, and secured by the interrupted suture, light dressings were applied. The patient, lying upon his back, was put to bed, with the limb supported upon a double inclined plane, having an angle correspondent to that of the knee, before the operation. As great care was necessary to provide against pressure upon the popliteal vessels, the limb reposed on two bran bags, which were fastened to the edges of the plane, so fashioned, that its angularity could be varied, without being removed from beneath the leg, as its extension might require. The vacancy between the bags was carefully supplied with cotton. Very slight hemorrhage followed, which, proceeding from the division of one of the articular arteries, stopped spontaneously in a short time; and except for a slight

oozing, which continued for two days, there was no sign of hemorrhage afterwards.

In the evening, the patient suffered very little pain; complaining only of a slight uneasiness in the inguinal region, which was attributed to the position of the limb; was indisposed to sleep, consequently took fifty drops of laudanum.

18th.—Passed a comfortable night; was without pain, and felt perfectly easy; oozing from the knee very inconsiderable; rigidity of muscles diminished, and leg less contracted.

19th.—Slept all night without pain. Pulse full, strong, and regular (about 72 in the minute). Leg had, by force of gravitation, extended itself a good deal.

American Journal of Medical Science, July, 1842, p. 40.

[The limb gradually elongated, and on May 1st, 1842, the patient walked about continually without the use of a crutch or stick, the knee being only half an inch shorter than the other.]

53.—NEW MODE OF TREATING STRUMOUS OPHTHALMIA.

By E. O. HOCKEN, M.D., London.

[Dr. Hocken, whose valuable contributions to ophthalmic surgery we have occasionally noticed in former volumes, attributes the intolerance of light in this affection, not to an affection of the retina, but to the ophthalmic division of the fifth nerve, which supplies sensation, nutrition, and secretion to the eye, and all the other contents of the orbit, and overrules the functions of the lachrymal gland. He believes that the retina itself is in direct communication with the fifth, through the medium of filaments distributed with those of the optic nerve, not, as Magendie thought, as the actual nerve of sight, but as the source of common sensibility to light, and the medium of impressions on the pupil through the lenticular ganglion.]

If a small foreign body, says Dr. Hocken, as a grain of sand, get between the upper eyelid and globe, a temporary condition, very analogous to strumous conjunctivitis, is induced; the patient manifests the greatest intolerance to light, the orbicularis palpebrarum is affected spasmodically, *the pupil contracts to a fine point*, and the eye waters profusely. When we come to

examine it we find the eye turned greatly upwards and outwards, and the same difficulty with the orbicularis. Now, in this case, it is obvious that all these symptoms depend entirely on an irritation of the fifth nerve. But it is equally clear to my mind that although the fifth nerve produces contraction of the pupil *per se*, still, under ordinary circumstances, the light must fall on the retina to occasion this change. The experiments of Fontana prove that the mere action of light on the iris is insufficient to produce contraction of the pupil unless the retina be simultaneously affected.

But daily observation also proves that if the fifth nerve be in a state of irritation the action of light on the eyelids alone is amply sufficient to produce the same effects. The experiments of Magendie also tend to confirm this opinion of the function and communication of the fifth nerve, and not, as he imagined that it was, the true nerve of vision; for although the retina was apparently insensible to intense light from division of the fifth it does not necessarily follow that the animals were blind. His experiments were performed on rabbits, in whom division of the fifth nerve produces contraction of the pupil, and even here when he admitted solar light, and concentrated it on the retina by a lens, the animal closed its lids. Mr. Walker, in some very ingenious and interesting remarks, clearly proves that under similar circumstances sensibility to light is lost, but not the proper functions of the retina. In a patient of his all the parts supplied by the fifth nerve were paralysed on one side of the face, and here there was a striking difference in the sensibility of the two eyes to light. The healthy eye could not bear the same amount of light for a single instant which produced no impression on the eye of the paralytic side; the flame was distinctly visible to the eye, but it produced no irritation. Again, where persons are quite blind, sensibility to light often remains.

Cases of complete amaurosis are occasionally met with where the iris moves actively and freely, and where the patients can tell by their sensations the difference between light and darkness, without being able to see at all. These cases appear to dissect, as it were, the different portions of the retina, and show its separate functions; the true retina is paralysed by disease in some part of the visual nervous system, whilst the sensitive functions of the fifth and the motor of the third nerves remain intact.

It is clear, therefore, that the intolerance of light, the spasmodic closure of the lids, the profuse lachrymation, the contracted state of the pupil, and the involuntary efforts to exclude the light, in strumous conjunctivitis, are not dependent on any derangement in the state of the retina itself, but on the various filaments of the fifth nerve which supply these different parts, including the retina; and that this is the true pathology of the affection those cases show where all these symptoms are present without phlyctenulæ, or any notable redness; and, moreover, as I shall presently show, that to remove the great susceptibility of this nerve is to cure the attack.

[Observing Mr. Wormald's success in treating the slighter forms of ophthalmic affections in St. Bartholomews Hospital, by daubing the nitrate of silver on the *outside* of the lids, Dr. Hocken gave it a fair trial in cases of strumous affections, and from his own experience highly extols the application.]

Mode of applying the Nitrate of Silver.—A clean stick of the nitrate of silver, having from one to two inches exposed, should be selected. The patient's eyelids are to be closed, and put slightly on the stretch by applying the thumb of the left hand to the eyebrow, and gently raising the skin; the nitrate of silver is then to be passed (previously moistened) over the whole surface of the skin of the upper, and subsequently of the lower eyelids, two or three times, smoothly, and without much pressure, bringing, not the point, but the sides of the stick of lunar caustic in contact with the skin. The object of this application is only to blacken and not to occasion any severer effects, and it will be found that, after a short time, as soon as the nitrate has had time fully to act on the fifth nerve, it will completely relieve the intolerance of light, the lachrymation, and, what is of the most importance, the spasmodic strivings of the orbicular muscle, and hence relieves the patient from that constant irritation and pressure which maintains and aggravates the affection.

In one of my patients, a little boy, four years old, I had an opportunity of treating an attack of strumous conjunctivitis and purulent ophthalmia in different eyes at short intervals of time. The strumous attack was cured at once, but in about a week after he was brought to me with purulent ophthalmia of the opposite eye. I at first used leeches, purging, and strong solutions of the nitrate of silver, to be placed between the lids, but this

treatment, although it subdued the severity of the attack, failed to cure it; it merely subsided into a chronic form. At this stage I applied the nitrate of silver to the outside of the lids, in the way described, which immediately gave a new feature to the case. He improved directly, and a second application about a week subsequently produced a cure in a few days.

Lancet, Nov. 19, 1842, p. 285.

[The additional treatment may consist of giving three or four grains of the hydr. c. creta, or two of calomel, with one, two, or only half a grain of quinine, (according to the age), and following it up about six hours afterwards with an appropriate dose of rhubarb, ginger, and sulphate of potass. If the smaller powder be given at night, the aperient should be delayed till next morning. This may be repeated twice a week.]

54.—ON LARYNGOTOMY.

By JOHN HILTON, Esq., F.R.S.

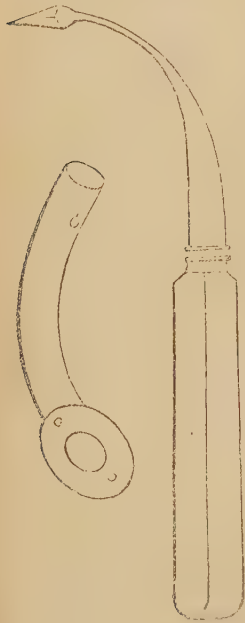
[Two very interesting papers have been just published on this subject; one in Guy's Hospital Reports, by Mr. Hilton, and the other in the Medico-Chirurgical Transactions, by Dr. John Wilson, Physician to the Middlesex Hospital. We quite agree with Mr. Hilton, that "laryngotomy or tracheotomy, as the case may be, is an operation a great deal too much neglected;" and when we reflect on the simplicity of the process adapted to relieve so dangerous a disease, we are only surprised that practitioners have not more frequently availed themselves of it, especially in cases where it can be the only possible way in which life is to be saved. On the subject of the operation itself, Mr. Hilton says:]

In this operation, I used a curved trochar and canula; the canula being oval from side to side; and the trochar lancet-shaped, much flattened above and below, and cutting at its point and edges. This instrument may be passed through the crico-thyroid membrane into the larynx, or through the trachea, with the greatest facility, the larynx being held steady by the surgeon's left hand: indeed it is scarcely necessary to divide the skin with a lancet, before attempting its introduction; yet, with the circumstances permitting, I think that

a good previous step. The forms of the cutting instrument and the canula are so adapted, that the canula presses upon the whole of the cut surface, and thus prevents any internal bleeding: and further, as regards laryngotomy through the crico-thyroid membrane, the oval outline of the canula is the form best adapted to the form of the space between the cartilages. It is said some persons cannot bear a canula in the larynx or trachea. I apprehend, that when this inconvenience arises, it occurs from the end of the canula touching the posterior part of the larynx or trachea; a point easily determined at the time, by knowing the length of the canula, and passing a probe to its then internal extremity. This contact it is difficult to avoid with a straight or a slightly-curved canula; and such an one is also very liable to be blown out of the larynx by the patient coughing.

With the intention of avoiding these inconveniences, it is better to use a trochar and canula very much curved; which, when introduced, hooks itself into the larynx or trachea; and is very secure in its position, with its internal aperture presenting itself completely to the centre and in the axis of the trachea in which it is placed, and so offering the greatest facility to the passage of the air during respiration, and for the exit of mucus.

The instrument which is sketched in the accompanying plate was made by Mr. Laundry, under the direction of my friend and colleague, Mr. Edward Cock; and answers its purpose exceedingly well.* The extreme convex and thinnest part of the trochar being "steel-tempered" and elastic, allows its introduction through the curved canula: yet I think it might be improved, by en-



*The wood cut is here reduced in size.

larging the external aperture; which would permit a more easy egress for any thing passing from the chest.

There is, perhaps, in the minds of the generality of patients a most unpleasant feeling associated with the idea of a cut in the throat into the windpipe, which may tend, on their parts, to interdict and prevent laryngotomy or tracheotomy being performed, except in an extreme emergency; but I feel assured that one of the obstacles to their more frequent performance in laryngeal affections is the supposed difficulty, and imaginary apprehension of danger in its completion.

This operation with the trochar and canula may be done well, and almost in an instant, by any medical man;—is not in itself in any way dangerous—not painful—and almost invariably gives immediate relief, imposing very little inconvenience on the patient at the time or subsequently: and when the necessity for the artificial opening no longer exists, the aperture closes with facility, and leaves but little cicatrix. Such considerations ought to recommend this operation, in many of those cases which are perhaps thought to admit of delay, or in which the propriety of its performance is now considered doubtful; such are, œdema of the glottis, and thickening or great relaxation of the sub-mucous cellular tissue with serous or purulent infiltration, diseases which exist much more frequently than is generally admitted, and very often prove fatal to the patient. Many deaths have occurred from obstruction to respiration by very enlarged tonsils, abscess in the walls of the pharynx, or swellings of other kinds in that neighbourhood, from the ill-judged delay of opening the larynx until death is immediately impending, and unfrequently thwarts the mis-timed determination of the medical attendant; but in chronic affections of the lining membrane, or of the cartilages of the larynx, I believe it will prove of infinite service: and I would add, that it is usually delayed much too late, to be in its proper place as a part of the treatment, and of its legitimate service in idiopathic inflammatory croup, but especially so in that produced by children drinking boiling water, &c. Cases of spasmodic croup in children, or in adults in whom the same symptoms may be repeatedly induced by an enlargement of the aorta, or diseased bronchial glands pressing upon and irritating the left recurrent laryngeal nerve, are those in which delay may be considered as always dangerous; and in which procrastination on the part of

the surgeon prolongs unnecessarily the extreme distress of the patient, and is very likely to deprive him of a resource in art which would have prolonged his life in comfort and security.

After what I have seen in practice, and from what I have observed in the inspection of the dead, I am certain laryngotomy, or tracheotomy, as the case may be, is an operation a great deal too much neglected; and I am equally confident that much distress might have been avoided, and very many lives saved by it; therefore I would urge its more frequent performance.

One supposed valid objection to the use of the trochar is the impossibility of seeing what structures are divided by it, and that you consequently run the risk of opening some blood-vessel which may bleed into the trachea and lungs. In the first place, no consideration of this kind ought to interfere, to delay the puncturing the tube, when danger appears at hand from suffocation; as the patient may be irretrievably dead by the loss of time in the more prolonged operation of cutting systematically through the structures, to arrive at the larynx or trachea: but as the canula fits accurately the aperture made by the trochar, all the divided vessels which could pour their blood into the wind-pipe would be compressed by the canula, and so prevent the occurrence of hæmorrhage. But granting that some blood might be admitted into the trachea, it would be, in all probability, in part, if not completely expelled at the next expiration: and even supposing it were not, the patient would only then be in the same condition as persons suffering from severe hæmoptysis; with this additional advantage, that the source of the hæmorrhage might be made visible by withdrawing the trochar, and the hæmorrhage arrested by rubbing the surface of the wound with nitrate of silver, by torsion of the vessel, or placing a ligature upon it.

Guy's Hospital Reports, October, 1842, p. 454.

[Mr. Hilton gives some interesting cases which it will not be necessary here to relate. We will give a short account of those related by Dr. Wilson, in the vol. of *Medico Chir. Trans.* just published. The first was a case at first of a chronic nature. The woman, Elizabeth Slack, aged 46, began with a cold, followed by a hoarseness, cough and spitting, which continued

many months ; she became subject to occasional paroxysms of stridulous breathing, accompanied with strange noises. In one of these attacks she became delirious, then comatose, countenance cadaverous, breathing about twice a minute with acute stridulous sounds: the larynx was immoveable during the attempts at inspiration. On applying the stethoscope no air could be heard to pass.]

The resident medical officers made a small opening through the integuments, just sufficient to admit a large trochar to pierce the crico-thyroid membrane, and pass into the larynx ; the stilette was then withdrawn, and the canula properly fixed, when air was instantly heard to rush into the trachea and lung ; though prior to this she had evidently ceased to breathe. The respiration gradually resumed its force and frequency. The pulse, which before had been intermittent, became steady, and increased in frequency. The countenance lost its livid appearance, and the whole surface became covered with a warm perspiration. Noon.—She is now conscious when spoken to, swallows with ease, and speaks when the tube is stopped by the finger,—complains of being sleepy.

Afterwards the mouth was made tender by mercury. The difficulty of breathing was relieved by swallowing warm water.

On the 19th the canula was removed from the larynx, and she breathed through the patulous opening, till she complained of the cold air passing down the trachea giving pain. Next day a curved tube was introduced, as the straight one irritated the back part of the larynx, but only for a day or two afterwards were any tubes used. For some time she continued to breathe through the opening, which diminished in size as the breathing through it became less. Often she expectorated a rusty-coloured fluid, and at times was able to swallow small quantities of solid food ; but she continued to make the same croupy noise during sleep, although less loud than at first.

The aperture often closed, and remained so for days, till paroxysms of coughing forced it open again ; but during these openings and closings, the wound was never interfered with, for it performed the same part as a safety-valve when subjected to too great pressure. Thus it was left till the natural passages were restored, so as to perform permanently their entire functions, when (November 17th) the wound closed finally.

Afterwards she felt more relieved. The cough continued, but the expectoration became of a better colour.

January 21st.—Slight cough with expectoration, breath shorter in damp weather,—can lie flat,—makes a noise during sleep,—general health much improved. Discharged.

[The other case was of a more acute character, having only been ill six days. The difficulty of respiration increased rapidly from the progress of inflammation. Hoarseness, urgent dyspnœa, and raucous breathing, threatened suffocation. The trochar and canula were passed between the thyroid and cricoid cartilages, as in the former case, but this not being followed by relief, laryngotomy was performed with instant relief.]

Med. Chirurgical Transactions, Vol. 7, New Series, p. 64.

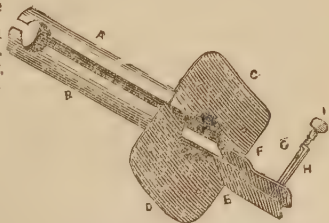
55.—DR. V. DUNNE'S DILATING CANULA.

The following is a description of a dilating canula invented by Dr. George Vickers Dunne, and recommended as an instrument well calculated to prevent the contraction which too frequently takes place in wounds of the trachea after the operation of tracheotomy.

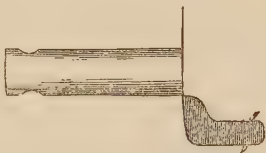
The first figure represents an oblique view of the instrument, which consists of a canula formed of two equal sections or portions, with an apparatus attached for opening the blades or sides.

A and B point out the sides of the canula, which are represented as being separated to the extent of one-sixteenth of an inch, and when placed in apposition, form a perfect straight canula, an inch and quarter in length, and three lines in diameter. At the anterior

extremity of the canula a shield is attached formed of two sections, C and D, which are perforated each by three holes to allow a bandage being attached. A pin may be observed to pass from the upper and under edge of one side of the shield



and enter a slide on the other to keep the shield in position. E and F are angular stems or branches which descend from the inferior edge of the shield half an inch, and project five-eighths of an inch to connect the canula with the moving apparatus. This consists of a square pin, which is connected with the branch E, passes through a square hole at the branch F, and is furnished at its extremity with a male screw G, which enters a female screw in the handle I. From the branch F a lateral branch H passes off anterior to the last, and is furnished with a ring at its extremity, which is secured on the inner extremity of the handle, but allows the latter to revolve within it on the male screw G.



The second figure gives a profile view of the instrument, which should be made of hard silver, and the canula and shield about the size of the first figure; but the moving apparatus is represented on much too small a scale, as from the extremity of the handle to the branch E should not be more than one inch and quarter in length, which would allow the canula to open sufficiently; this part should be made of sufficient strength, and all the joints should fit most accurately, as upon this depends the perfection of the instrument, which is solely worked by turning the handle.

Dublin Medical Press, July 29, 1842, p. 37.

56.—NEW INSTRUMENT FOR OPENING THE TRACHEA.

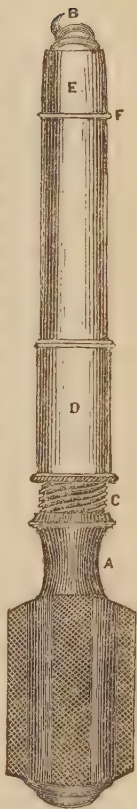
By Mr. MILLIKIN, of Dublin.

[This instrument has received the approbation of several eminent men in Dublin, among whom we may mention the names of Professor Porter, Messrs. Cusack, Wilmot, Fleming, and Smyly.]

Mr. Millikin of Grafton-street, has invented an instrument for opening the trachea, of which the following is a description:—

The tracheotome is composed of two parts—

A, the stilette having (as represented in the accompanying figure,) a large flat screw B, at the extremity, for fixing the trachea, and another screw C, at the handle, on which revolves the canula D. The canula is of silver, and terminates in a ring of steel E, which is sharp and in the form of a punch. When prepared for use, the stilette should be withdrawn within the canula, and the trachea being laid bare, the instrument is placed on the part selected. The operator now holds the canula firmly, and by two or three turns of the stilette, fixes the instrument by means of the screw B, which answers instead of the hook in the old operation. He now holds the handle, and rotates the canula from left to right, until the guard F presses against the trachea. If a vessel has been wounded, and there be much hæmorrhage the stilette is to be withdrawn, the circular piece cut out, remaining in the screw; a flexible gum catheter can then be passed through the canula, which may be withdrawn, and the bleeding arrested by the usual means.



The above instrument first suggested itself to the inventor at an operation in Mercer's Hospital, on which occasion both Messrs. Read and Tagert remarked "that there was great room for improvement in the instrument used in that operation." He, therefore, took Haller's punch for his model, and through the kind suggestions of many members of the profession he is enabled to bring before the world a perfect instrument. Being round it removes a perfectly circular piece, cutting equally through rings, and softer structures, and not leaving flaps opening internally, as is the case where the tracheal trochar is used. Acting as a wedge, it prevents any blood getting down into the bronchi.

57.—ON BENZOIC ACID IN URINARY DISORDERS.

By JOHN SMITH SODEN, Esq., Surgeon to the United Hospital, Bath.

[In Article 12 of our fourth vol., will be found an interesting account by Dr. Ure, of benzoic acid in urinary disorders. Dr. Walker, of Huddersfield, subsequently published some excellent remarks on the same subject, illustrated by four interesting cases, which we ought to have published in our last volume, but unintentionally omitted. Dr. Walker says on this subject:]

There are few more distressing complaints than those seated in the bladder, which so often occur in the decline of life, as well as in persons much engaged in sedentary employments. There may be no gouty diathesis, no affection of the prostate gland, no calculus in the bladder, no hæmorrhoidal tumours, or any other affection of any viscus adjacent to the bladder, yet the functions of the bladder itself may be impaired, and more or less difficulty in passing the water may arise, so as to embitter the declining years of life, and gradually superinduce constitutional decay. Such instances occur to every practitioner, and are amongst the most intractable as well as painful he has to encounter. Nor is this distressing affection peculiar to those who have led an irregular and intemperate life, but occasionally attacks the most regular and temperate men, as they advance in years. Sometimes the mucous membrane of the bladder becomes thickened, indurated, or ulcerated, and a considerable quantity of mucus or pus passes off with the urine, giving to it the appearance of whey, and now and then blood is discharged. The dysuria, of which I am now speaking, is of a chronic kind, and incidental chiefly to persons in the decline of life—the “dysuria senilis,” if I may so term it—and is not always accompanied with excess of gravel in the bladder. In some instances there is little or no gravelly sediment; in others the contrary, with a large deposit of urates. Sometimes there is mixed with the mucous sediment some particles of gravel. But all these circumstances are familiar to the profession. Indeed, the natural tendency to disease of the urinary organs in advanced life is a circumstance remarked by Hippocrates himself, who observes, “*Renum et vesicæ dolores difficulter sanantur in senibus.*” But if there is no stone in the

bladder it may go on for years, if proper care is taken to avoid any undue source of irritation in the mode of living, and where there is no material pain or fever. It more frequently happens, however, that, with the strictest attention to every precaution, a very slight cause, even *sudden change* in the weather, will be followed by increased dysuria. Many are the remedies usually had recourse to. The uva ursi, buchu, balsam copaibæ, with other similar medicines, are sometimes useful. With others, gentle aperients taken from time to time, and anodyne glysters, are more beneficial; and even the injection into the bladder, now and then, of some emollient decoction, by means of a vesicæ lotura, with a view to allay irritation, have been found very useful. But the use of benzoic acid is among the latest of the modes of treatment; and so far as I can judge from its exhibition in several cases of dysuria senilis, under my own care during the last few months, I am inclined to augur very favourably of its utility. In some instances we may account for the benefit resulting from its use by its chemical action on the urates, which, if in excess, may add to the acrimony of the water, and thus prove a source of irritation to the mucous membrane of the bladder. But it is often of service where the gravel in the *urine* is inconsiderable, and where the irritation and pain would seem to have arisen from some other cause.

Provincial Medical and Surgical Journal, Feb. 26, 1842, p. 424.

[These remarks of Dr. Walker induced Mr. Soden to try the same combination of benzoic acid and copaiba in certain cases of urinary disease which he met with. In one case related, Mr. Soden was first called in on account of retention of urine: at that time the patient had frequent inclination to pass urine, though able to void only a small quantity at each call, and it was generally loaded with a mucous secretion. The prostate was enlarged, and the catheter was daily passed by the patient himself for the next three years, during which time he took nearly every remedy used in such cases, and found the uva ursi as useful as any. The symptoms, however, became aggravated, and the urine now deposited a large quantity of muco-purulent discharge, and he complained much of the irritability of the bladder. Mr. Soden then says:]

I injected warm water, and, as on former occasions he had derived more benefit from the exhibition of uva ursi than from

any other remedy, I prescribed that medicine, together with the use of the hip-bath, and a suitable regimen : as no material relief ensued at the end of three days, I directed the benzoic acid in the following form :—

Benzoic acid, one drachm ; balsam of copaiba, half an ounce ; yolk of egg, enough to form a mixture with seven ounces of camphor mixture. Two tablespoonfuls to be taken thrice a day.

I never witnessed any thing equal to the efficacy of this medicine ; the urine became clearer after the first dose, and in two days it was perfectly free from mucous deposit ; the irritability of the bladder was lessened, and in four days the patient resumed his self-management. I did not feel the calculous during this attendance. The gentleman left Bath about six weeks after this period. I saw him a few days before his departure ; he told me that he was as well as usual, that he continued to use the catheter, but that the urine was quite clear, and that when he observed any tendency to mucous deposit he had recourse to the mixture, and always with success.

The result of this case induced me to give the medicine a trial at the United Hospital, and our intelligent house surgeon, Mr. Morgan, has been kind enough to give me the heads of four cases in which it has been exhibited at that institution.

Case 1.—A man, aged thirty-five, applied for admission as an out-patient, complaining of frequent desire to make water, which has existed for the last month ; the urine deposits mucous sediment ; the patient has no gonorrhœa, and refers his disorder to being much exposed to cold and wet. On passing a catheter the urethra was found perfectly natural, but there was some slight hæmorrhage after the urine had been evacuated ; has some pain in the loins ; pulse rather strong ; was at first cupped on the loins, and ordered aperients ; and then diosma and the pareira brava, with opiates, were given in succession. After having attended for three weeks, he complained of some pain in the joints, for which he was ordered colchicum, and though it greatly relieved the rheumatic affection, produced no beneficial effect upon the state of the bladder. Mr. Soden saw him, and directed the mixture, with benzoic acid and balsam of copaiba. He found benefit after using it for two days, and in ten days was perfectly well.

The most remarkable circumstance connected with the exhi-

bition of this medicine, as far as my experience goes, is its decided efficacy in diminishing, and, in some instances, completely suppressing the mucopurulent deposition in the urine, which is so prominent a symptom in most cases of affection of the bladder. I am aware that a doubt may be very fairly entertained whether this effect is to be attributed to the benzoic acid, or to the balsam of copaiba, or to their combination. In the few cases which I have just related I was induced to give both these medicines, from the advantage which had been derived from their use in Dr. Walker's practice. It is, however, very desirable to ascertain the effect of benzoic acid alone in similar cases, more particularly as balsam of copaiba so frequently disagrees with delicate stomachs.

Ibid, July 29, 1812, p. 426.

58.—ON A NEW WAY OF OPERATING FOR CATARACT.

By JOHN MORGAN, Esq., F.L.S., Surgeon to Guy's Hospital.

[The way in which Mr. Morgan now operates for cataract seems certainly to be new in this country, although practised with success by Mr. Egerton, of the Eye Infirmary, Calcutta; but we should doubt its being an improvement on the more usual methods of operation; and we publish it not so much from our admiration of it, as on account of the excellent authority by which it comes recommended.]

The pupillary aperture having been dilated by the application of belladonna to the eyebrow, the patient is to be placed as in cases of operation for depression, the eye to be operated upon being towards the light, and the head of the patient fixed by an assistant opposite to the breast of the operator, and against his own. I always prefer the sitting to the recumbent posture, except in operations for extraction, as there is an advantage gained by seeing down into the globe as you depress the lens to its destination. The needle which I use is extremely fine, of the same thickness from the point to the handle; cutting at the point, but not at the sides, and hardly longer than the diameter of the globe. In all operations on the eye, I invariably use a very short needle; which is, in my opinion, much more convenient than one of the usual length. The point of the instrument is now to be passed through the

sclerotic, at the distance of rather more than a line from its junction with the cornea, and just below its transverse diameter; it is then to be carried, with a slight inclination forwards, directly through the central substance of the cataract, completely transfixing the lens. This part of the operation requires a good deal of careful management: the object will be to disturb surrounding parts as little as possible, by transfixing the lens *in situ*; and this is to be effected, not by pushing the point of the needle at once directly onwards, but by carefully drilling its way through the opaque body by rotating the handle of the instrument as it is held between the thumb and forefinger, while the point at the same time is gently urged onwards. Having thus insured complete transfixion by drilling, the first step of the operation is accomplished; and it will be seen that the second can now be performed with the greatest ease and precision—I mean the dislocation and depression of the lens, which must of necessity follow the exact course of the point of the instrument by which it is impaled: and as the needle has been introduced below its transverse diameter, it will be *pulled*, instead of *pushed* down, and thus be effectually prevented turning on its axis into the vitreous humour as it is descending,—an occurrence which will sometimes take place during the operation as at present performed, and which, for obvious reasons, it is desirable to guard against. Another advantage gained by transfixion is, that all chance of injuring the retina by the pressure of the lens, either from its slipping from the point of the instrument during the operation, or from its having been unconsciously left resting on that membrane after its completion, all danger of amaurosis from such causes is removed; for we have such perfect command over the opaque body, that we can determine to the greatest nicety the exact course it will take in its descent, as well as the precise situation in which it will be left after the needle is withdrawn. The course should be so directed, that the anterior surface of the lens passes hardly a line distant from the corpus ciliare and retina, taking a curved sweep as it descends, corresponding with the concave curvature of the interior of the globe; and it should be left as nearly as possible with its upper circumference a line below the lower edge of the widely-dilated pupil. Very great care is required in disentangling the instrument from the cataract, as it is being withdrawn from the globe; and this should be done by drilling the

needle *out* from the depressed lens as it lies, without changing the direction of the handle of the instrument till it has been liberated in the same manner as it has been drilled *in* while the lens was *in situ* ; for by neglecting this precaution, the lens will follow the point of the instrument, and be either raised again or forcibly dragged against the retina as the instrument is drilled out. Should any portion of an opaque capsule remain in the pupillary aperture after depression, it should be brought into the anterior chamber, if possible, with the point of the needle, before it is withdrawn from the globe, and after it has been disentangled from the lens. But I would recommend caution in cutting up a *posterior* capsule, lest the cells of the vitreous humour should be broken down in doing so : for, as I have already stated, I consider the preservation of their integrity very essential to the *success* of an operation for depression.

[The exact course of the lens may certainly be well directed when it is thus fixed to the end of the needle, and as little of the vitreous humour as possible is thereby displaced, so that the hyaloid membrane is comparatively unbroken, and thus acts as a powerful agent in preventing the future ascent of the lens ; but we question whether this advantage will compensate for the risk of *drilling* the needle into the lens, and then *drilling* it out again. We suspect, that if the lens were harder than usual, it would be even more displaced than by the simple operation of depression, and when it had become depressed on the point of the needle, cases would occasionally occur in which it might be difficult even to extricate it from the lens.

Guy's Hospital Reports, Oct. 1842, p. 463.

59.—ON THE TREATMENT OF ENTROPION.

By O'B. BELLINGHAM, M.D. one of the Medical Officers of St. Vincent's Hospital.

[Dr. Bellingham brings forward two cases of this disease in which Dr. Jacob's method of operating is shewn to advantage. In the first case the superior tarsi of both eyelids were completely inverted, except at the angles ; the lashes lying against the balls of the eyes : and all the consequences of such an affection were present. In the second case, Guthrie's operation

had been performed with some imperfect relief; after which, the edge of the tarsal cartilage with the bulbs of the eyelashes was excised, since which time the right eye has been relieved. Soon afterwards the left eye became affected, and the tarsal cartilage was inverted, except close to the angles of the eye, and the lashes were in contact with the globe. Every surgeon knows that this must soon or late seriously injure the organ, and that some operation is invariably called for. "In the simplest form of the disease where the integuments of the lid are merely relaxed and lengthened, or where the entropion is confined to the lower lid the excision of a fold or the destruction by an escharotic of a portion will generally be sufficient."]

In the advanced stages of this affection, however, when the tarsal cartilage is corrugated and shortened, other proceedings are necessary; and among the operations for its relief, one of the earliest is that of Sir P. Crampton.

"Having raised the upper eyelid by means of the first and second fingers of the left hand, he passed a narrow, slightly curved, and sharp-pointed bistoury between the eye and eyelid at its internal angle, and pushed it through the lid, so as completely to divide the tarsal cartilage by a perpendicular incision about three lines in length; a similar incision was then made at the internal angle; the eyelid immediately felt unconfined, and its margin could with ease be turned outwards; he then by a transverse section of the conjunctiva united the extremities of the perpendicular incisions, which was effected by running the knife along the conjunctiva, beginning at the external, and terminating at the internal section. As soon as the bleeding ceased, the parts were washed and dried, and a suspensorium palpebrarum was then applied to retain the lid everted."

Mr. Guthrie combines the excision of a portion of the integuments of the lid with the operation proposed by Sir P. Crampton.

Mr. Lawrence, in bad cases, prefers the excision of the edge of the lid, together with the bulbs of the eyelashes; this, as he observes, is certainly effectual in removing the immediate cause of the evil, viz., the irritation caused by the inverted cilia.

The operation performed in the foregoing cases was that first practised by Dr. Jacob; it is a modification and improvement upon Sir P. Crampton's, and it possesses several advantages over those usually performed. It is equally effectual and more simple than Mr. Guthrie's; and it does away with the necessity

for the application of any apparatus to preserve the lid in an everted state, as in Sir P. Crampton's and Mr. Guthrie's.

The patient being placed in a sitting posture, and the head supported by an assistant, the inverted upper lid was separated from the globe of the eye by means of the finger or a sharp hook, and then with a pair of strong scissors two perpendicular incisions were made through the tarsal cartilage, each about a quarter of an inch in length, one upon the temporal, the other upon the nasal side, avoiding the punctum, and including the whole inverted portion of the lid; this part being now everted and held in that position, the two perpendicular incisions were connected by a horizontal incision upon the conjunctival surface close to the ciliary margin by means of a scalpel, cutting through the conjunctiva and tarsal cartilage, and leaving the inverted portion of the margin united to the rest of the lid, *merely by the integuments*; taking care that the knife did not penetrate through the skin. The inverted portion of the lid now no longer turned against the ball of the eye, and as soon as the smarting from the operation subsided, the patient felt relief—a light pledget of lint wet with cold water, or a dilute solution of sulphate of zinc was then laid upon the eye, and moistened occasionally.

The success of this operation depends in a great measure upon the edges of the incision being prevented from uniting by the first intention, particularly the horizontal incision upon the conjunctival surface; this is effected by everting the lid occasionally during the first few days, and by touching the edges immediately after the operation with the sulphate of copper, so as to cause it to suppurate and fill up by granulation.

In the first of these cases both eyes were operated upon, and the patient left the hospital perfectly cured. I saw her about a year afterwards, at which time she was labouring under a recent attack of conjunctivitis; when it subsided there was a tendency to inversion of a portion of one lid, which, however, required only a little attention to cleanliness on her part to be removed.

The second patient also left the hospital perfectly well, the cornea having nearly recovered its transparency; some time afterwards a few cilia growing about the punctum internal to the incision of the cartilage gave him some annoyance; but there has been no return of the entropion.

60.—ON SOLUTION OF GUM ARABIC IN SCALDS AND BURNS.

By WM. RHIND, Esq., Edinburgh.

[Amongst the various ingenious methods of protecting the injured surface from the contact of the atmosphere, in cases of scalds and burns, the application of a solution of gum arabic, from its simplicity and readiness of application, is worthy of notice. It is perhaps not so readily and universally obtained as the solution of common soap, used by Dr. Williamson, (see *Retrospect* Vol. IV., Article 70), or the treacle and water used by Mr. Buller, (see Art. 75, Vol. V.), yet when it can be readily and quickly obtained, it will no doubt prove equally serviceable. When the skin is not destroyed, the parts are to be repeatedly smeared over with a solution; as often as one layer is dry another is to be applied, and this may be repeated several times. Mr. Rhind says:]

In those distressing cases of the extensive burning of the bodies of young children, I would not hesitate applying the solution over the whole body, at about the warmth of 96° . It does not cool down the system by sudden evaporation or sudden abstraction of heat like a common cold fluid, a circumstance in most cases to be dreaded, for gum is a bad conductor of heat; neither does it preclude an exposure to moderately cool air, which seems to keep down the excessive irritation consequent upon extensive scalding of the skin.

As it is of consequence to have the solution prepared instantly, the powdered gum, if it can be procured, may be in a few minutes dissolved in warm water. If this is not ready prepared, the common gum in small particles roughly pounded, will very soon dissolve, and the application in any case may be applied at a temperature of 96° or 100° , although in general it is more soothing when applied colder. Rancid gum solution should not be used, as in this state it has lost its adhesive quality. Two, three, or four applications may be necessary, at intervals of five or ten minutes. The skin should be previously freed of all oily matters, and the first coating, in order that it may be insinuated closely into the furrowed surfaces of the skin, should be rather thinner than the subsequent ones. In order to produce the proper effect, it should form a varnished coat of some thickness and closeness over the whole space of the burnt part.

With regard to the *modus operandi* of this substance, I am as much in the dark as we usually are with the mode of action of most other well-known remedies. I am unable to say whether it has a specific action, or whether it allays the inflammable irritation of the skin, by effectually excluding the external air, and by its being a bad conductor of heat.

The first proposition might be so far tested by trying if other gums and mucilages, or isinglass, for example, produced a similar effect. This I have not tried.

From some experiments, which, however, were never completed, that I instituted some years ago, regarding the influence of oxygen on inflamed tissues and vessels, I am inclined to think that the exclusion of atmospheric air influences very much inflammatory action, and in this way, perhaps, the gum solution checks the inflammation of the skin in burns. Inflammation caused by touching the skin with nitrous acid and other irritants, appears to be suddenly allayed by a solution of gum-arabic; erysipelatous spots on the skin seemed also in some trials influenced by this application. And I may here suggest, that it might be tried in the first stages of the pustules of small-pox, especially those of the face, with a view to modify their development, and prevent pitting.

Edinburgh Medical and Surgical Journal, Oct. 1842, p. 430.

61—*On Cysts of the Eyelids.* By M. VELPEAU. I would say a few words respecting the case of a man, on whom I am about to operate for three small tumours on the eyelid. Of two of these the outline cannot be distinguished, being masked by the third which is more voluminous. This last is evidently a cyst filled with fluid or semifluid material. The nature of the contents of the two others is not easy to diagnose, from their size and the thickness of their walls, but from analogy we may suppose them to be filled with a liquid or semiconcrete matter.

Tumours of this description are very rarely cured by any plan of treatment, except by operation. Occasionally, indeed, they disappear without any operation or treatment. Sometimes this may result from the particular constitution of the individual, as in a young subject, who about the age of puberty was freed from an affection of this nature. Or, it may be produced by some other disease occurring at the same time, as in the

case of a woman who had had three of these tumours on the eyelid, and on whom I had fixed a period for the operation. But she came to me some months afterwards, and informed me that she had suffered under an affection of the chest, and the tumours had disappeared. Occasionally they disappear under local applications for their resolution, but we can rarely expect success to attend this treatment, and it is altogether ineffectual when they have attained a considerable development. They may, however, be safely and with certainty cured by surgical means.

Of the two proceedings, extirpation and incision, the former; employed by most surgeons, appears to me a tedious operation. It is necessary to dissect with caution, and if it be a cyst, whatever care is taken it will be difficult to avoid opening it; it then is necessary to excise it entirely, and to apply cauterization, or there will be a considerable chance of return. If the contents of the tumour be concrete, the operation will be comparatively easy; but, otherwise, I think incision is preferable: it is less painful, and quite as successful. Some persons in practising this operation hold the tumour with the fingers, others place an elevator beneath the eyelid. I employ simply two pair of forceps, of which one is held by an assistant; I myself, holding the other in such a manner that the eyelid is rendered tense between them, and raised from the globe of the eye. I make the incision, expel the contents, and apply nitrate of silver to the interior of the cavity. There is sometimes slight consecutive inflammation, and the eyelid swells a little, and soon an eschar is detached, and the cure accomplished in eight days. A piece of lint dipped in saturnine lotion or cold water is the only dressing employed. I should, however, observe, that by extirpation the cure is more prompt; a piece of dressing is placed on the wound, and the whole is terminated.

After these observations the operation was performed: M. Velpeau incised the different tumours, and cauterized the bottom of each wound.

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Medical Gazette, Aug. 5, 1842, p. 732.

62.—*Use of Strychnia in Amaurosis.* A labouring boy, twelve years old, received a blow in the right supra-orbital region, by the falling of a pewter vessel which he was endeavouring to remove from a high shelf. At the moment of re-

ceiving the blow he perceived a flash of light in the eye, but could see nothing with it afterwards. In three hours he came under the care of Dr. Dusterberg, of Lippstadt. Immediately above the right eyelid was seen a small blue spot of the size of a horse-bean. In the eye-ball itself nothing abnormal could be detected; no trace of opacity or extravasation of blood. The pupil acted naturally, as in the sound organ, but the power of vision was entirely lost in the right eye; so that he was unconscious when it was directed to the full glare of the sun. He was treated for two months with bleeding, cold applications, mercurial frictions, blisters, drastics, emetics, electricity, and even the frontal nerve was divided; but all in vain: the amaurosis did not in any degree yield. Subsequently a solution of a grain of nitrate of strychnia in half an ounce of rectified spirit of wine was dropped into the eye four or five times daily: the result was, that in fourteen days, sensations of light were experienced in the affected eye, which, under the continued use of the remedy, increased so that he was enabled to distinguish coloured objects. After a period of three months, the power of vision had so far returned that he could recognise bodies at a distance of three feet. At this point the improvement stopped, notwithstanding that the dose of the strychnia was increased, and its endermic application had recourse to. The case, however, may fairly be adduced to show the beneficial influence of strychnia on torpid amaurosis.

Ibid, p. 733.

63.—*Excision of the Elbow Joint.* By M. ROBERT. M. Robert presented a woman, aged 26 years, on whom he had practised the operation of excision of the elbow-joint. The disease rendering the operation necessary was caries of the humero-cubital articulation, following a fall on the elbow. There were several fistulous openings about the olecranon. In the fold of the arm were two deep sinuses penetrating into the joint. The soft parts around were moderately engorged. The operation was effected by dividing and reflecting the integuments over the olecranon. The humerus was sawn through immediately above the condyles, the ulna below the coronary process, and the radius just below its articular extremity. The limb was placed in the apparatus of M. Guizot. But little reaction ensued, and the fever and sleeplessness which had previously

harassed the patient ceased immediately. Nevertheless, the suppuration continued a long time, it being impossible to approximate the divided ends of the bones, and the wound was not completely cicatrised for 18 months. At the time of observation, two years and three months after the operation, it was interesting to observe the manner in which the movements of the fore-arm were executed.

The limb had regained nearly the same size as that of the opposite side. When it was in repose, and hanging by the side of the thorax, there was perceived between the extremity of the humerus and the bones of the forearm, a separation of nearly three fingers' breadth, occupied by a dense, but very flexible tissue, which allowed the forearm to move freely in all directions. The limb in this position looked as if impotent or paralysed. But when the patient attempted to bend the forearm, the space comprised between the bones of the arm and forearm was effaced by the ascent of the latter, which mounted to obtain a fulcrum from the lower surface of the humerus, and the bendment of flexion was then effected, being carried to such an extent that the forearm formed a right angle with the arm. The patient could easily carry the hand to the head or to the opposite shoulder, and could raise tolerably heavy weights as a chair. The power of pronating the hand existed in a moderate degree. The movements of the fingers were perfectly free. She could grasp with tolerable force, bodies placed in her hand, and could hold objects of very small size. For several months she had resumed her occupation as a sempstress; she is accustomed to use her needle with the left hand, holding and fixing the work with the right. To avoid the fatigue which would result from long-continued flexion of the forearm, she wears, while at work, a small apparatus composed of two pieces of leather, one embracing the upper, the other the forearm, which are joined at the fold of the limb.

Medical Gazette, July 22, 1842, p. 654.

64.—*Treatment of Sore Nipple.* [The ordinary treatment of excoriations of the nipple by the remedies in common use is frequently found to fail. A solution of salt, wine, or even brandy, will often succeed; at other times we may use Goulard's lotion, a solution of borax, in the proportion of a drachm with half an ounce of alcohol in three ounces of water, as recom-

mended by Sir Astley Cooper, or solution of the sulphate of zinc or lunar caustic, or the white precipitate ointment. If these excoriations do not heal they often give rise to *fissures* of the nipples, which are often very deep and cause considerable hæmorrhage and pain. The same remedies as for excoriated nipples will here also be found useful, but we shall frequently fail altogether in curing these affections so long as the child is continually being applied to the part. A writer in the *Lancet* suggests that the tincture of catechu will be found a valuable remedy in such cases. He says:]

Now, you want an application that will not be injurious to the child, and that will thicken and toughen the nipple and the surrounding integuments. It occurred to me that a solution containing tannin might have this effect. I first tried the decoction of oakbark : upon another occasion I applied the tincture of catechu. This answered perfectly : the nipple, which had been intolerably painful for weeks, and was denuded, returned to its natural state within a day or two, and the mother, who was about to wean her child in despair, was able to suckle it for more than twelve months, without any inconvenience.

The tincture of catechu should be applied twice a-day with a camel's-hair pencil.

Lancet, April 30th, 1842, p. 155.

[Mr. Chavasse, of Birmingham, speaks highly of the same application, and we also can strongly recommend it from the effects we have seen from its use. The tincture may be applied frequently, and especially after each time the child has been sucking.]

65.—*Treatment of Gleet.* By S. E. R. JONES, Esq. [Mr. Jones relates the two following cases out of numerous others in which he successfully treated this troublesome affection by the injection of the tincture of sesquichloride of iron.]

John Thomson, aged 24, had gonorrhœa eighteen months ago, and gleet continued since ; has been under treatment of a surgeon, who ordered cubebs, copaiva, &c., but as he was careless of consequences did not apply regularly : he had a discharge of thin white pus when he applied to me. Ordered nitrate of silver and sulphate of zinc injections, alternately to be used, but without effect. I then made use of tincture of iron, gts.

xxv. three times a day, and gradually increased to gts. xl.; in a fortnight he was perfectly well; has had no return since.

Wm. Simpson, aged 21, had gleet twelve months; ordered the tincture of iron, dose, gts. xx. two or three times a day; to be increased to dose, gts. xxxv. After seven or eight days the discharge had nearly ceased; in fifteen days he was cured.

Ibid, July 2, 1842, p. 480.

66.—*Antidote to Arsenic*. [Dr. G. Bird recommends the following ready preparation of the hydro-sesquioxide of iron as one of the best antidotes to arsenic:—Half an ounce of the tincture of the sesquioxide of iron; one ounce of liquor potassæ. Mix.]

Ibid, Nov. 19, 1842, p. 301.

Lig. Kali Carbonici.—D. Emsmann, of Eckartsberge, was called to a young woman who had been poisoned by means of white arsenic. She was in great pain, was vomiting, purging, and suffering great thirst, &c. He gave, every half hour, a spoonful of a mixture composed of half an ounce of the lig. kali carb. in two ounces of syr. althææ. The effect was immediate, the vomiting ceased, the pain was relieved, and the other symptoms gradually disappeared.

Dublin Journal of Medical Science, Nov. 1842, p. 312.

67.—*Enlarged Patellar Bursa dispersed by Subcutaneous Incision*. [This case was admitted into the city of Dublin Hospital, January 1st, 1841; and after trying various means she submitted to the following operation.]

An incision, to the extent of one-eighth of an inch, was made along the outer margin of the tumour; then a very small bistoury was introduced obliquely into the cyst, at such a distance from the superficial cutaneous incision as prevented the escape of the fluid.

The sac was then cut in several places, chiefly on the anterior surface, and the instrument withdrawn, all the fluid having been evacuated.

A small compress was then applied, and several straps of adhesive plaster, and a roller which extended from the toes to the knee.

A splint was also applied, which extended from the middle of the back part of the thigh to the same point of the leg.

10th.—Dressings were removed : considerable diminution in size of swelling.

Straps of adhesive plaster were again applied nearly in the same way as that recommended by Baynton.—No constitutional disturbance.

14th.—Straps quite loose. A strong evidence of subsidence of swelling.

17th.—Natural appearance of the joint nearly restored.

Discharged at her own request, but strictly cautioned against returning to her usual employment for some time.

Though some cases have been already published by my colleague, Mr. Williams, showing the advantage of adopting the line of treatment now detailed, I have been induced to give this case publicity from the very speedy and satisfactory results obtained in it, in hope that this practice will become more general, as many practitioners are still apprehensive of sinister effects following the line of practice now recommended. If the incision, or rather puncture into the sac, be made with care, the internal surface of the cyst then cautiously scored after it, the fluid evacuated by firm pressure, so as to prevent the ingress of air into the cavity, no danger need be apprehended of unpleasant effects succeeding to this measure.

We all recollect the time formerly occupied in attempting the removal of such swellings by discutient applications, visicatories, and such means of resolution. The only instances in which the subcutaneous incision might fail, are those where the sac is much thickened, its interior loculated, and the cells filled with a thick gelatiniform substance : still, in such instances, it is a means which should be kept in view.

Dublin Medical Press, Oct. 26, 1842, p. 262.

68.—*On Keratoplasty, or Transplantation of the Cornea.* When the cornea is detached from the rest of the globe of the eye in an animal, and immediately reapplied by means of sutures, it unites again ; and the same union takes place, even when the cornea is transplanted from the eye of one animal to another, its transparency remaining uninjured. The first experiments of this kind were made in 1818, by M. Reisinger, of Augsburgh, and repeated, but without success, in 1831, by M. Dieffenbach. MM. Himly and Thomé, of Bonn, subsequently obtained some satisfactory results ; but it was chiefly by

the ideas of Walther, of Munich, that the author's experiments [M. Feldmann, in conjunction with Dr. Davis, of Munich] were suggested.

Provincial Med. and Surg. Journal, Nov. 12, 1842, p. 132.

69.—*On Cataract.* M. Bonnet, of Lyons, recommends that the same plan for fixing the eye, in the operation for extraction of a cataract, should be adopted as for the operation for strabismus. He raises and depresses the upper and lower eyelids by means of specula, which are confided to careful assistants, who are directed not to press on the eye. A hook without a spring is next fixed in the conjunctiva above and external to the cornea, and a spring hook is next more firmly passed into the conjunctiva and subconjunctival fascia, a little above the external angle of the eyelids. This last hook is then confided to the assistant, who keeps the upper eyelid supported; the object being to fix the eye and prevent its being carried inwards. The operator then takes the specula on the lower lid in his left hand, and makes the section of the cornea with the keratotome. Sometimes the lens escapes immediately; if it does not, slight pressure on the upper part of the eye will dislodge it; it is rarely necessary to puncture the capsule. M. Bonnet says this operation should be seen to understand the facility with which it is practised. The iris is never wounded, nor, if the assistants are careful, does enough of the aqueous humour escape to flatten the eye. He adds that venesection is not an easier operation. M. Pétréquin has operated thus for cataract by depression.

Ibid, Aug. 6, 1842, p. 358.

70.—*Injection of Belladonna in Strangulated Hernia.* By Dr. F. FISCHER, of Tambach. In September 1838, a woman, aged 68, experienced a swelling in the right groin, during the occurrence of a severe cough: this was followed by pain and tenderness in the part, vomiting, sleeplessness, and pain in the abdomen. Examination showed a strangulated hernia, which could not be reduced. The author directed injections of belladonna (one scruple of the leaves in each) to be administered. After three clysters the taxis was again employed, and the hernia returned without difficulty.

A man, aged 40 years, had from his youth suffered under an inguinal hernia of the right side, which became incarcerated

whilst he was loading a waggon with wood. After taxis, bleeding, cold applications, and other means, had been tried without success, three injections of belladonna were given. The effect of these clysters shewed themselves after a while by symptoms of narcotism, as restlessness, delirium, dilated pupil, &c., which subsided under the employment of cold applications to the head. Reduction was then again attempted, and the hernia returned with very little trouble.

Medical Gazette, Aug. 19, 1842, p. 811.

71.—*On the Treatment of Hip-joint Disease.* By S. PATERSON EVANS, M.D., Newmarket-on-Fergus. [After making some judicious observations on the pathology and treatment of this formidable disease, illustrated by an interesting case, Dr. Evans draws the following conclusions:]

1. That *mercury* may be regarded as a *specific remedy* in hip disease.

2. That we may employ it with equal *certainty* and *benefit* in *scrofulous* and non-scrofulous subjects.

3. That it is better to bring the system at once and fully under its action, than to give a *long* and *lingering* alterative course of mercury.

4. That we are on no grounds justified in having recourse, during, at least the first or second stage of morbus coxæ, to *issues, setons, moxas, or blisters*.

5. That these violent remedies (?) *protract* the patient's sufferings, *hinder* the disease from being brought to a *favourable termination*, and have a tendency, from the *perpetual pain, irritation, convulsive* movements of the limb, which they occasion, and *constant suppuration*, to harass the patient's nights, and ultimately to wear out his exhausted frame.

6. That we are now in possession of *facts* sufficient to warrant our *affirming* that *mercury* is the *speediest*, the most *certain*, and the most *efficacious* remedy we possess for the cure of hip disease.

7. That in the majority of cases, mercury alone, when pushed to salivation, will effect a cure. That the application of leeches are occasionally, though not always required, and when any little pain remains at the groin, a small blister will then be of benefit.

8. That rest, the horizontal posture, and attention to diet, regimen, &c., must be strictly enjoined.

9. That by a careful attention to symptoms, we shall frequently be able to diagnose hip disease during an early period of the first stage.

11. That hip-joint disease, if not in all, certainly in nearly all cases, is caused, *not* by *primary ulceration* of the *cartilages*, but by *scrofulous inflammation* of the *synovial membrane*—this morbid state being the first link in the chain of pathological actions.

Lastly. That the diseased limb is *really elongated* during the second stage of coxalgia, and that this appears to be in a great measure effected not by curvature of the spine, &c., but by the pushing out of the head of the femur; this is caused by the inflammation within the joint, aided by the organic relaxation of the surrounding muscles.

Dublin Medical Press, Aug. 17, 1842, p. 106.

72.—*Preservation of Nitrate of Silver.* By M. DUMERIL. M. Dumeril has for a long while employed a very simple process for preserving the nitrate of silver from the injurious effects of exposure to the air, when run into sticks. It consists in merely coating the caustic with engraver's sealing-wax, which contains a large quantity of shel-lac. This wax adheres very well, and forms a strong and smooth varnish, as it were, which remains unaffected by the atmosphere. Thus protected, the nitrate no longer stains the fingers, injures the caustic-case, nor is in any way changed by the moisture in the air, possesses a greater degree of solidity, and at the same time, the process is of exceeding service in practice, inasmuch as when wanted for use, a small part only of the caustic need be uncovered by means of a penknife, so that its application can be restricted to the part where it is required. This is of peculiar utility in ulceration of the throat, aphthæ, fissures, &c.

Provincial Medical and Surgical Journal, July 2nd, 1842, p. 260.

73.—*The Bilateral Operation for Stone.* [In article 47 of our last volume will be found the excellent remarks of Mr. Lee, on the different operations for stone; amongst the rest he describes the bilateral operation as discovered by Ribes and Chaussier. The following is a more minute description of this

operation which is not without its advocates.] The patient should be placed on a table, with his head lower than his pelvis, so that the region of the perineum and anus may be presented in their full extent, and the pubes be on a nearly horizontal plan. The thighs, of course, must be separated and secured. A catheter with a double groove, one to the right, another to the left, the two meeting at the point of the greatest curve—that is, at the part corresponding to the base of the bulb and membranous portion of the urethra—is next introduced, and confided to an assistant, who at the same time raises the scrotum, and places the skin of the perineum on the stretch. The anus being depressed by three fingers of the left hand, a semicircular or crescent-shaped incision from right to left is made in the perineum, a little above the bowel, dividing the skin, part of the splincter, and transversus perinei. Its convexity is to be forwards, the concavity towards the anus. The next step is to pass the index finger into the wound, in order to depress the rectum, to make way by the scalpel as far as the membranous part of the urethra, to incise the canal, and prolong the incision right and left in the body of the prostate. The operation is then to be completed in the usual way.

The advantages of the operation are stated by M. Ribes to be, opening a less oblique, more easy and straight route to the bladder, in the course of which no arterial branch is injured, by which hæmorrhage of any importance might be caused, the greater safety of the vesiculæ seminales, and a more commodious and more free aperture for the introduction of instruments, and for the extraction of the stone.

Provincial Medical and Surgical Journal, Sept. 3, 1842, p. 446.

[But, although this operation is said by Dr. Ribes to have the above advantages, he does not mention its disadvantages. There can be no doubt that such an operation will expose the rectum to more danger than it will experience from the lateral operation, particularly in old people in whom it is often dilated: although this danger may be considerably diminished by carefully depressing the bowel with the forefinger of the left hand whilst making the incisions. Mr. Liston recommends that when the stone is large and cannot easily be extracted by a lateral operation the prostate should be incised on the opposite side, thus combining the bilateral with the lateral operation. On

this practice Mr. Lee says, "Where, however, the bilateral operation seems to be indicated, I should conceive it would be better to perform it in preference to this method of Mr. Liston's, in which the outward wound being on one side, the traction in the removal of the stone must necessarily be made in that direction, and when a large stone is in the grasp of the forceps, would be more likely to occasion injury and laceration of the parts than when the direction of the outward incision corresponded with that at the neck of the bladder. Besides, the majority of operators having once seized the stone, would not stop to make the second incision of the prostate, but would continue their attempts to extract it, and thus risk injuring the parts by the employment of an undue degree of force. Notwithstanding the reports of the success of this bilateral operation in France, we know that these reports of our neighbours are seldom to be depended upon; and therefore, we are sure that the bilateral operation will not often be resorted to by British surgeons."]

74.—*Transplantation of a Sheep's Tooth into the Socket of a Child.* By ROBERT TWISS, M.R.C.S., Castle Island, Kerry. On the 24th of April, 1841, after having extracted the remainder of a broken front tooth from Maria Godfrey, a young lady, aged twelve years, I put in its place the front tooth of a yearling sheep, reeking from the jaw of the living animal, having previously shortened its root about a quarter of an inch. After the first week, during which there was little promised success (the tooth being much too small for the space, and the child not attending to directions,) it became more and more firm, with every indication of its having taken root; and by accurate measurement I find it has enlarged, but not so much as it would have done in its pristine state, a circumstance observed in transplanted trees.

Mr. Twiss was led to select the sheep, on account of the extreme cleanliness of this animal, and the beauty and aptitude of the teeth for the purpose. He recommends that teeth be taken only from sheep two or three years old, as at that age they are about the size of adult human teeth, and they are more likely to grow when transplanted. The root, he observes, may be shortened or pared, if necessary, to fit in its new situation. The new tooth may be kept *in situ* by waxed silk ligatures.

London and Edin. Monthly Journal of Med. Science, Oct. 1842, p. 932.

75.—*Reunion of completely separated portions of Finger.* By SIGNOR DELLA FANTERIA. A girl, fourteen years old, was engaged with another person in some domestic occupation, when the latter accidentally let fall a knife which cut off two of her fingers below the first phalanx. The author being soon after summoned, found the two pieces in some meal on which the patient's hand was resting at the time of the accident; but he discovered, to his great surprise, that each of them was divided into two portions. However, he determined to try to unite them, and having put the bits together, he kept them all in their places with sutures and strips of plaster. In a few days the adhesion was completed, and the patient ultimately recovered the entire use of her fingers.

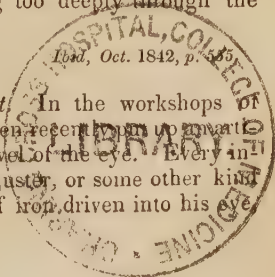
It is necessary to mention that the authenticity of this strange case was confirmed by Professors Centofanti and Vacca.

British and Foreign Medical Review, July 1842, p. 231.

[This extraordinary circumstance might be doubted by the English reader, who is so suspicious of many facts related in foreign journals, had he not a corroboration of it in another case related by Graham; who gives a case as follows:—"A joiner, of middle age," &c. (See Retrospect No. III., Article 50.)]

76.—*On a new Cranial Saw.* By M. BERTHERAND. The author has invented a saw for cutting the cranium, in examinations after death, and calls it a *cranial cyclotome*. It consists of a saw, concave at one edge and convex at the other, which, by means of a screw, can be turned on its long handle, so as to present either edge at will in the direction for cutting. It is also fitted with a copper conductor, which can be worked in the same way, and fixed at any required distance from the edge, so as to prevent the saw from passing too deeply through the skull.

77.—*Surgical Use of the Magnet.* In the workshops of Fairbairne (in Belgium) there has been recently put up an artificial magnet of great power, at the level of the eye. Every instant one may see a turner, or an adjuster, or some other kind of workman, who has had a particle of iron driven into his eye.



running to the magnet, which draws it out as soon as the eyelids are separated and the eye held near its pole. One may conceive from this how a magnet might be made of sufficient power to draw a piece of iron even from the flesh or from the bones.

Ibid, p. 557.

78.—*Treatment of Leucoma by Incisions into the Cornea.* By Dr. HOLSCHER, of Hanover. Two cases are related in which this treatment was adopted. The case which suggested it was that of a girl, twenty-two years of age, who had lost the left eye from purulent ophthalmia in infancy, and in whom the right was almost blind from leucoma of nearly the whole cornea. Various means had been used in vain. The author, therefore, made an artificial pupil by drawing the iris through the cornea and excising a portion of it. Severe inflammation ensued which was with difficulty managed; but three months after, the patient not only had a good artificial pupil, but the cornea had become less leucomatous, and this especially at the part where the incision through it had been made. The next bad case of leucoma, therefore, which the author met with, he treated as follows:—The patient was a lad fourteen years old, who had lost his right eye from purulent ophthalmia in infancy, and had leucoma of nearly all the left cornea. At four different times, with intervals of eight days, a common cataract knife was passed into the cornea as deep as possible without penetrating it, and was drawn out with a sliding motion. After the first three times no inflammation ensued; therefore, after the fourth, some tinct. opii was dropped into the wound three times a day. Severe inflammation set in, but it was moderated by local bleeding, and the treatment by opium was continued for two months. The leucoma became gradually less, and the patient who could at first only discern light from darkness, became able to guide himself in walking, and to perceive the window-frames in his room. The second case was that of a man forty years old, who had leucoma of one eye from gonorrhæal ophthalmia. It had been variously but vainly treated for a year. The author made incisions into the cornea twice, with an interval of fourteen days. After the second, a tolerably severe inflammation ensued, which required active treatment. As soon as it had ceased, sulphate

of zinc and tincture of opium were again dropped into the eye, and after a year and a half, not a trace of leucoma could be seen.

Ibid, p. 558.

79.—*On Mattico as a Styptic.* By W. MUNRO, M. D., Dundee. “At the meeting of the Provincial Medical and Association, held at York in August last, Dr. Jeffreys of Liverpool introduced to the profession an herb called matico, from South America, as a styptic. A short account of it appeared in the *Lancet*, January, 1839.—Vide *Monthly Journal*, Sep., 1841, p. 689.”

The matico has been very often used by me in the Dundee Infirmary as an external styptic, but I have not as yet used it internally. It has been very often used to stop the bleeding from leech bites, and uniformly with the most decided success. Leeches were applied, by his own desire, inside the nostrils, to our house surgeon, a stout, florid young man, with head symptoms in fever. The bleeding, which was profuse, could not be stopped by cold applications to the head, plugging, &c.; but the matico, in leaf, applied over the bites, and pressed on with the point of the finger, proved immediately successful. The application of the leaf caused increased heat and throbbing for five minutes, when all unpleasant symptoms went off. The matico was applied to a man with a wound of the right temple, in whom a considerable branch of the temporal artery had been divided; the wound was pressed, and a compress and bandage applied, but still the blood burst out. Cold water was several times had recourse to, still the bleeding returned after a while; at last the matico was used. I stuffed the wound with the powder, but found that it was washed away from the wound in the vessel; I then pressed in several pieces of the leaves, holding them firmly for some time with the point of the finger; and the result was, that we had no more hæmorrhage. We had a somewhat similar case of a man with a wound of a branch of the palmar artery, which resisted graduated compression and bandages, and in which the matico was used with the best success.

London and Edin Monthly Journal of Med. Science, August, 1812, p. 737.

80.—*Sudden formation of Cataract.* By DR. MARTIN, Portland. [A very interesting case of this description is re-

lated by Dr. Martin as follows, and we can readily believe in the reality of the circumstance, having had a case a few days after reading the annexed, of nearly a similar description.

Mary Grant, aged 35, of a miserable cachetic habit, after sitting up for several nights with her invalid mother, suffering much bodily and mental distress, and crying a great deal, fell asleep in the sitting posture, by the fire-side, at about twelve o'clock, on the night of Friday, October 15, 1841. About four or five o'clock she awoke, and (although her vision was before perfect) she then found herself unable to distinguish any object around her, and when the clearer light of day came, she was but able to trace the outline of the window sash. Having applied to me for advice, three days after, I was surprised on examination to find the lens of both eyes semiopaque, and presenting the appearance of being starred from the centre, as if breaking up during maceration. She complained of severe pains in the forehead, jaws, and shoulders—pulse 80, full and hard—tongue loaded with white fur—bowels confined. By means of blue pill, bitters, and blisters to the temples, the pains were removed, and her general health improved, but the lenses gradually became more opaque, and she is now unable to trace the outlines of objects passed before her eyes, although the retina is perfectly sensible to the impression of light. That she had perfect vision up to the night on which she states she became blind, I feel perfectly satisfied, as on that evening having been in attendance, I saw her moving about, and nurse-tending her mother, and I had seen her frequently during the previous month.

He (Dr. Martin) remembered when a pupil to have seen a somewhat analogous case. The man was a patient in Sir P. Dunn's Hospital, and the following was the history which he gave:—He said that he had been married to a farmer's daughter, and after the usual fun of an Irish wedding, he retired to bed, his sight being perfectly good. Very early in the morning he was called by the necessities of nature to the outside of the house, when he became conscious of the loss of sight. Fearing the ridicule of his friends he made his way into the house to where his clothes lay, which he found with some difficulty, and left his bride to wonder at his loss for the next two months. He came up to Dublin, and was admitted into Sir P. Dunn's

Hospital, where he was successfully operated on by Dr. Jacob. I need not add that his story was laughed at and disbelieved at the time; but I have little doubt now, that it was analogous to that of Mary Grant. In his case also, as in that of Mary Grant, the blindness was not complete at once; in the end, however, both lenses became densely opaque.

Dublin Medical Press, May 4, 1842, p. 274.

81.—*Treatment of Nævus.* By Professor PATTISON, New York. A. B., a healthy infant, eleven months old, affected with “vascular nævus” on the right shoulder, as large as a pigeon’s egg.

Remarks by Professor Pattison.—After mentioning the various means which have been proposed for removing this disease, *e. g.*, excision, vaccination, kali purum, &c., he says, “But by far the safest and most effectual treatment is the removal of the tumour by means of passing repeatedly through it red-hot needles. The principle on which this treatment is based, is of course perfectly obvious, and we will now proceed to its adoption in the present case.”

“Operation.—An assistant, by means of a spirit lamp, made the needles red-hot, and they were passed in rapid succession about twenty times into the tumour in all directions. There was no hæmorrhage, and the child apparently suffered very little pain. The operation was repeated twice afterwards, after intervals of a week, and in the course of a month the tumour had entirely sloughed away, and the part healed without a vestige of the diseased structure being left.”

Lond. & Edin. Monthly Journal of Med. Science, June, 1842, p. 552.

82.—*Eutropion cured by the Subcutaneous Incision.* By Dr. NEUMANN. Mathias Zacharsi, eighteen years of age, was affected with eutropion of the upper and lower eyelids of both eyes, the result of frequent attacks of scrofulous ophthalmia. From the constant irritation of the eyelashes, the cornea of the right eye had become quite opaque, and only a small portion of the left one remained transparent. The patient could hardly see anything. In order to benefit his sight, if possible, Dr. Newmann performed the following operation: At half-an-inch from the external angle of each eye a small tenotome was

inserted, and carried on to the internal angle; the cutting edge of the knife was then turned downwards, and the levator palpebrae and other tissues divided. To prevent the globe of the eye from being injured, a thin plate of horn was placed between it and the eyelid. The muscles of the inferior eyelid were cut in a similar manner, the knife being entered at the puncture in the temple, made for the division of the muscles of the upper eyelid. The eyelashes regained their normal direction. In the left eye the operation was quite successful, but it had to be repeated on the right in three weeks. The sight of the left eye was completely restored, but only very slight improvement took place in the right, on account of the great opacity of the cornea.

Ibid, Sept. 1842, p. 858.

83.—*On Hare-Lip*. By Dr. HOUSTON. Dr. Houston has detailed in the "Dublin Journal of Medical Science," two cases of hare-lip, in which he operated, introducing a modification of the proceeding generally adopted. The first case was a very troublesome one; the patient, a child two years and a half old, having a double hare-lip, with double fissure of the hard palate anteriorly, but only one in the soft palate. The incisor teeth were distorted. The operation was performed a few days after the child had been admitted into the hospital. The first step was, detaching the edges of the labial fissure from the bones by an incision with a scalpel through the mucous membrane, after which the outer layer of the projecting tubercle of bone was removed by nippers, and the distorted teeth, together with the pulps of the secondary ones, were also taken away, thus making a flat surface and support for the new lip. The edges of the hare-lip were then pared with strong, sharp scissors; there was but little hæmorrhage. The needles employed to bring the wounds together were two long, fine, woollen or darning needles, tempered and filed at the points to the shape of glovers' needles. The lower was that introduced first; the point was made to penetrate the skin on the left side, about a line above the free edge, and two lines and a half to the outside of the vertical incision. Thence it was pushed slightly upwards and backwards, so as to appear on the cut surface a little higher than the level of its entrance. It was then pushed through on the opposite side in a similar, but reversed order, and brought out there at a point of the skin exactly opposite to the point of entrance. The

two flaps glided readily towards each other on the long, smooth needle, and when made to touch were found to fit with every exactitude, giving to the red border a straight edge below, and forming the lip into a level surface in front. The manœuvre of raising the point of the needle during its entrance ensured a firmer hold of the flesh, and, by pulling down the mucous membrane a little, added to the fulness of the lip at that part. The second needle was then introduced in a direction parallel to the first. It entered the skin close under the left nostril, passed through about half the thickness of the flesh of the lip, then traversed the central triangular piece, and came out again under the right nostril. This needle was introduced in a directly transverse course, and not in an arched direction, as practised with the preceding one; and it was not allowed to pass altogether so deeply into the substance of the lip, as by such a disposition a better seat was given to the central tubercle. A high position was selected for this needle, with the view of closing the fissure into the right nostril as far as possible. Both needles being thus laid in, a thread of silk was twisted several times, first round the upper one and then another round the lower, as in the figure of 8, and both were made subsequently to cross in the centre between the needles, so as to keep the apex of the tubercle in its place, care being taken, however, not to pull them in any degree calculated to approximate the needles to each other. It was found that, by tying the superior needle first, a better adaptation of all the parts of the complicated wound, and a neater arrangement of the red borders was accomplished, than could be by the more usual mode—that, indeed, first attempted—of securing the lower needle as the primary step in the approximation. The peculiar length of the needles, by lessening their readiness to fall out of the wounds, facilitated greatly the subsequent manipulations of the dressings, and rendered unnecessary the application of a ligature in either of them until the fitting place and direction for both had been determined upon. As final steps, the projecting ends of the needles were nipped off, little rolls of sticking plaster were applied to their stumps, and the cheeks were drawn and held forwards by adhesive straps, so as to take off all stress from the needles. No further dressings were applied. In seventy-two hours the dressings and needles were removed, when the union between the wounded surfaces was found to be complete in every part, so as to give a

perfectly straight edge to the red border below, and superiorly to close the right fissure a little way inside the nostril. The child left the hospital about a fortnight afterwards, perfectly cured, and with the unseemly breadth of the nose much reduced. The palatine fissures were left untouched. The operation was similarly performed in the other case, one of single hare-lip with double palatine fissures.

Dr. Houston afterwards examines the question as to what period of life is the best fitted for the performance of an operation for the cure of hare-lip, and he decides in favour of the third month after birth, urging as his reasons that the parts recover themselves better than when the operation is done later in life: that the lip in due time acquires fulness and pliancy; the nose is prevented from assuming a spread-out, ugly appearance; the fissure in the palate, if there be any, closes greatly with the growth, if supported by a firm and perfect lip; bad habits of speaking, such as nasal or guttural utterance, which, if once established, become irremediable, are avoided; and by removing such disfiguration before the child is conscious of its existence, it is spared the feelings of humiliation which the consciousness of such infirmity necessarily imparts, and which invariably gives a tone to the character of the individual. He states that he has operated on several infants of three months old, with equal success in all the cases, and has never failed. Dupuytren also recommends the third month, Velpeau the first six, but if they had already passed, he then deferred operating until the tenth or fifteenth year. Sir A. Cooper advised waiting until the patient had completed the second year of existence.

Provincial Medical and Surgical Journal, June 4, 1842, p. 179.

MIDWIFERY.

84—ON A PECULIAR ANIMAL MATTER (GRAVIDINE) IN THE URINE OF PREGNANT WOMEN.

By JAMES STARK, M.D., F.R.S.E.

[In the Edin. Med. and Surg. Journal for Jan. 1842, is a very interesting paper by Dr. Stark, on this subject.]

After a dissertation on the symptoms of pregnancy during the three first months of gestation, Dr. Stark enters into an examination, chemical and microscopical, to determine the nature of the deposit in the urine of pregnant females, to which the attention of the profession has lately been directed, as being one of the earliest and most trustworthy signs of impregnation. The conclusion at which he arrives, is, that "this substance is a matter *sui generis* ; a proximate substance or principle forming in some measure, a connecting link between the albuminous and gelatinous principles." He therefore proposes to call it *gravidine*, both as occurring during the state of pregnancy, and also on account of its falling down to the bottom of the vessel as the fluid containing it cools. Like albumen, fibrin, and caseum, this matter is capable of existing in two states, dissolved or coagulated. If the urine containing the deposit is allowed to stand for from two to six days, a tenacious opalescent pellicle, like congealed fat, rises to the top,—this substance called by Nauche *kiestein*, (on account of the odour exhaled during its fermentation, and from a supposition that it is owing to the presence of milk in the urine,) results from the decomposition of the *gravidine*. During this process of decomposition, the globules of the *gravidine* pass through several changes,—urates and purpurates become developed in the urine, and ultimately the triple phosphate makes its appearance, whence the opaline hue of the *kiestein*, and the crystalline appearance described by Dr. Golding Bird as one of its characteristics.

[The Editor of the Monthly Journal makes the following just remarks on the above:]

Even admitting the existence of *gravidine* as a peculiar principle in the urine of pregnant women, it is too difficult to demonstrate its presence with certainty and facility, to make it very available in every-day practice for the diagnosis of pregnancy. Dr. Stark's discovery, however, if real, is a very interesting one, and, like every one of the same kind, must be either confirmed or disproved by other observers. The researches of Donn e regarding the proportion of calcareous salts in the urine of pregnant and non-pregnant women, are of more easy application in practice.*

London and Edin. Monthly Journal of Med. Science, Feb. 1842, p. 206.

[The correctness of Dr. Stark's opinion is called in question by Dr. Griffith, resident medical officer to the Finsbury Dispensary, in a paper published in the Edin. Monthly Journal for July 1842, in which he states that Dr. Stark has been rather too hasty in adding to our list a new elementary substance which he calls "*gravidine*." We have not space here to give more than the conclusions at which Dr. Griffith arrives, referring the reader who wishes for a more critical notice of Dr. Griffith's objections to the existence of *gravidine*, to the original paper as referred to below.

Dr. Griffith closes his paper with the following conclusions:]

1. That there exist a large number of globules in pregnant urine. (Dr. S.)

2. That there exists a deposit of lithate of ammonia.

3. That a pellicle of kiestein forms on the surface of pregnant urine, as elsewhere stated.

4. That neither the globules, nor the lithate of ammonia have any thing to do with the kiestein.

5. That the globules and the lithate of ammonia are totally distinct; that the term "*gravidine*" cannot be applied to two totally different substances; and that as they can both be accounted for in a simple manner, there is no occasion for the name at all.

I was surprised to find that Dr. S., and even Mr. Letheby,

* For the interesting remarks of M. Donn e on this subject see Retrospect, Vol. V., Article 98, p. 233.

(in a late number of the Medical Gazette,) deny the existence of the caseous odour. I have so constantly observed this, that I consider it almost as characteristic as the kiestein. I think we can fully account for Mr. Letheby's getting a putrefactive odour instead of the caseous, as he uses too high a temperature.

After all that has been written on the subject, I think we must confess that the peculiarities of the urine in the pregnant female, (except the kiestein) are not at all distinctively marked; the formation of the kiestein is the only constant one; the lithate of ammonia, its colour and quantity, must vary according to the state of the skin and temperature of the atmosphere. I think it is the fact of Dr. S.'s not having boiled the sediment in water, and filtered whilst hot, so as to examine the sediment and the globules (separately washed off the filter) perfectly distinctly, that has caused this confusion. To get the lithate pure it should be examined when first deposited, before the kiestein has formed and any of it fallen to mix with the lithate.

Ibid, July 1842, p. 566.

[This paper of Dr. Griffith's draws forth another from Dr. Stark, in which he very ingeniously defends himself against the objections of Dr. Griffith, supported as he is in these objections by Dr. Golding Bird. We have not space here, however, to enter into a critical examination of the arguments on either side; our practice being as much as possible to avoid all argument, and to present to our readers such matter as is of evident use, and the practical tendency of which cannot be much disputed. Dr. Stark comes to the following conclusion:]

1. That a peculiar animal matter is secreted along with the urine during pregnancy; and that it exists in the largest quantity during the earlier months.

2. That this matter often forms a solid coagulum resembling albumen, when the fluid holding it in solution is long boiled.

3. That this matter is largely soluble in the urine whilst hot, but more sparingly so when cold; that the excess is therefore deposited as the urine cools, along with the usual urinary salts, and forms the chief portion of the natural sediment.

4. That it is the animal matter of this sediment, which, by undergoing certain unknown changes, rises to the surface, and forms there the animal pellicle, known by the name of *kiestein*.

5. That the animal matter held in solution in the urine undergoes the same changes, and that as it also rises to the surface, it contributes to form the pellicle of animal matter.

6. That the animal matter of the natural sediment, that still in solution in the urine, and that which forms the *kiestein* pellicle, are all composed of globular particles of extreme minuteness and transparency, possessing in all these three states the same size, form, lustre, and general appearance, being only more transparent when in solution; and that the coagulum formed during boiling has the same microscopic character.

7. That the ultimate globular molecules of this animal matter possess the same microscopic characters as the ultimate globules or granules of albumen, caseum, fibrine, and gelatine.

8. That when thrown down from their solution by means of certain chemical agents, deposited naturally or forming the pellicle, these minute globules or granules often arrange themselves into rounded agglomerations, which can scarcely be recognised to differ from pus or fibrinous corpuscles.

9. That æther removes, as a thick mucilaginous-looking fluid, all animal matters, as albumen, caseum, gelatine, &c., from their watery solutions.

10. That æther has the very same action as the animal matter in the urine of the pregnant female, removing it both from the natural sediment, and from its solution in the clear urine, in the form of a thick mucilaginous-looking fluid, when, like that of albumen, caseum, and gelatine, it floats on the surface of the watery portion of the liquid, but is itself covered by the free and pure æther.

11. That æther has the very same action on the pellicle of animal matter termed *kiestein*.

12. That æther does NOT so remove salts from watery fluids, whether they consist of crystals held in suspension, or are in a state of solution.

13. That the minute globular molecules or granules, of which this peculiar animal matter consists, are rendered more dis-

tinctly visible to the microscope when thus removed by means of æther; and no perceptible difference can be detected between the appearance of these molecules removed from the natural sediment, and those removed from the clear urine, or from the kiestein pellicle.

14. That the ultimate globules or molecules of albumen, fibrine, caseum, and gelatine, are also rendered much more distinct in consequence of being removed from their watery solution by means of æther, and when compared, under a powerful microscope, with the ultimate globules of the peculiar matter of urine, cannot be recognised to differ in any respect, either in size, form, lustre, general appearance, or in the agglomerated forms which they assume.

15. That all saline bodies, which are truly salts, and not animal matter, mistaken for salts, assume the crystalline arrangement, recognisable at least by the microscope.

16. That the matter met with in the urine of the pregnant female, never assumes the crystalline arrangement.

17. That salts undergo complete solution in water.

18. That animal matters are only apparently dissolved in watery fluids, but that their ultimate globular molecules may at all times be rendered at once apparent, by the addition of any agent which will not alter their properties, but only render them somewhat more opaque.

19. That the animal matters of the urine, those of gelatine, albumen, caseum, &c., are possessed of these peculiar properties of animal matter, and their ultimate globular molecules may in many cases be even seen by means of first-rate instruments, without any additions being made to the fluid which holds them in solution.

20. That former experimentalists seem in many cases, (perhaps in all ?) to have described this animal matter met with in the urine, as the lithate or urate of ammonia, from its possessing a few characters in common with that salt; and from the chemical agents employed in ascertaining its presence decomposing that animal substance, and giving rise to the formation of an animal acid—the uric or lithic acid; just in the same way as these chemical agents act on several other substances, converting them into animal or vegetable acids.

21. That this animal matter is probably more easily decomposed by chemical agents, in consequence of its being thrown

off as a useless excrescence ; its elements being perhaps thereby rendered more disposed to enter into new combinations.

Lastly, That I was perfectly justified in describing this as a new animal matter, and applying to it the term of *gravidine*.

Ibid, Sept. 1842, p. 811.

85.—PUERPERAL FEVER ARISING FROM THE CONTAGION OF TYPHUS.

By W. E. HUMBLE, Esq., Islington.

[Mr. Humble relates the following interesting case:]

On the 17th of September, 1841, I was requested to see Mrs. L., aged about fifty, a highly respectable person. I found her labouring under typhus fever, complicated with inflammation of the brain ; she had already been under treatment for two or three weeks. The head symptoms were relieved by appropriate treatment, but she continued to labour under pure typhus in a very severe form ; the teeth and lips were covered with black sordes ; the tongue dry and black ; the most complete prostration ; fæces passed involuntarily ; low muttering delirium ; in fact, for some time life was only continued by the constant use of wine, strong beef-tea, quinine, &c. The exhalations from the body were most offensive. While in this deplorable condition, myself expecting every time I called to find her dead, amongst those waiting on her was her daughter, Mrs. H., the subject of the following case :—

Unknown to the rest of the family, she was not only enciente, but had advanced to nearly or quite the ninth month of utero-gestation, for although married, some unfortunate circumstances led her to conceal this fact. Besides waiting on her mother, she at night generally lay down on the same bed by her side, not, however, undressed, and for the purpose of sleeping, but merely to pass in silent thought the tedious hours. On the 22nd of September she had been waiting on her mother as usual, at which time her mother was at about the worst, and at night while so engaged the pains of labour came on. She did not apprise any one of the circumstance, thinking they would go off, but bore them without exciting any suspicion. The rest of the family retired to rest, leaving her with her mother in the state described. The pains increased, she left the bed, but was

unable to reach the door of the room, sank on the floor, and there, without assistance of any kind, and without being able to wake any individual in the house, the child was born. After some time her groans were heard by her sister, who came to see what was the matter, and at last I was sent for at three, a.m. I immediately removed the placenta, and calmed her fears, and had her moved with the greatest tenderness out of the room from her mother, from whom the most offensive and putrid exhalations were at the time proceeding.

Having left directions as to the management of the patients I returned home, and the next morning explained to the friends the imminent danger that threatened Mrs. H., having seen a great deal of puerperal fever among the poorer classes, and found it generally fatal when arising from such causes as this. Feeling confident that it was next to impossible that she could escape a severe attack of puerperal fever, I watched the case most anxiously. The first two or three days passed tolerably well, but ere long the dreaded symptoms showed themselves. I had left directions to be sent for at any hour of the day or night, on the occurrence of any alarming symptoms, but some hours were allowed to elapse between their first appearance and my being acquainted with the fact. I found on visiting her that puerperal fever had, indeed, set in. There was the most intense pain over the abdomen, not confined to one particular spot, and excessively increased on pressure; constant vomiting; rapid, rather small, pulse; faintness; great pain in sinciput; tongue becoming covered with white greasy fur; countenance very anxious. These were the chief characteristic symptoms. I at once bled her to a large amount; and it should be remarked that, although I took away from twenty-five to thirty ounces of blood, no fainting was produced. She felt slightly relieved by it, but not to any great extent. I immediately ordered leeches to be applied to the abdomen, a full dose of tincture of opium to be taken, and calomel and opium every two hours. The blood was excessively buffed; indeed, I had it taken to my house, and showed it to two practitioners of old standing, and they acknowledged they had scarcely ever seen so intense a buff.

In the evening she appeared rather better, and the vomiting was much abated, but excessive tenderness on pressure remained, and the pulse continued very rapid. I ordered the calomel and opium to be continued every three hours, and turpentine fomen-

tations to be applied to the abdomen, as I did not think she would bear a further loss of blood. The turpentine was applied very assiduously, and the whole abdomen was rendered very sore.

The next day she was, however, better, and, as far as we could judge, less pain was produced on pressure, and the vomiting had nearly ceased. The inflammation extended to the mucous coat of the large intestines, and diarrhœa came on, which was uncontrolled by astringents, but yielded readily to local antiphlogistic remedies. The countenance now reassumed its natural appearance, as it had before betokened the most intense suffering and disease. She continued to improve daily: still, however, great care was required. The vomiting recurred slightly, and was checked by sesquicarbonate of soda and hydrocyanic acid. The alarming symptoms, however, were quite cured, and she recovered quite as rapidly as we could possibly expect.

For three days I did not expect that either her mother, herself, or her infant, who was also very ill, would recover. I was, however, not a little gratified to find my anxieties and exertions repaid by the recovery of them all, and they are at this day in good health. Now, the chief points to which I would draw your attention are these: The occurrence of puerperal fever in consequence of being exposed to the noxious influence of typhus, as I had prognosticated, and which, I believe, will generally be found to be the case, and notwithstanding the nature of the source of contagion, the evident inflammatory nature of the disease itself, and however much it may differ from sporadic peritonitis as ordinarily met with in its symptoms, yet that the most active antiphlogistic remedies should be applied at the commencement of the disease, and that they will cut it short. I conceive that when so much discussion and difference of opinion have existed on the subject, this case, eminently successful as regards the treatment, is anything but devoid of interest.

Lancet, July 9, 1842, p. 509.

[Although, no doubt Mr. Humble's treatment of this case was very judicious, yet we should hesitate about adopting a similar treatment in *all* cases of the kind that might be brought before us. In many of these cases the symptoms partake more of the typhoid character and would not bear the depletion which

was here adopted. We could not adopt a safer guide as to the particular kind of practice to be adopted than the *effect* of the remedies which are used. For example, in the case here alluded to the blood-letting which was copious, did not produce any sensibly sinking effect, and the patient was relieved by it. We might at once, therefore, conclude that the affection was dynamic and inflammatory, but in some of these cases we should find the pulse fail under very slight depletion, which would immediately warn us to desist. We would, therefore, suggest that before such active treatment as in the above case be adopted, the practitioner ought *to feel his way* by a slight venesection, and if necessary, repeat it copiously or not as the symptoms indicated, besides pursuing an antiphlogistic or a stimulating mode of treatment according to the effect produced by the first remedy.]

86.—*Pregnancy without the usual signs, and Parturition without labour pains.* By T. LEWIS, Esq. Liverpool. The case was that of a lady, aged 41, who had noticed an enlargement of abdomen for six or seven months. She felt certain she was not pregnant, because she had not experienced symptoms similar to those of her first pregnancy. Catamenia appeared last, eight or nine months ago. External examination not proving satisfactory, examination *per vaginam* was made, which disclosed the nature of the case. The os uteri was dilated to the size of a shilling, the neck entirely expanded, and the membranes and child's head could be felt. Though informed she was pregnant, she was sceptical, and made no preparation for the event.

On January 5th the author was sent for, and found the child born before his arrival; the funis was ruptured about four inches from the umbilicus. It appears the lady had suffered from diarrhœa for two days previous. At one o'clock, a.m., she awoke, she says, with griping pains in her belly; these continued until six, when she got out of bed for ease. She walked into an adjoining room, and, bending herself, rested her hands on the table. Suddenly the waters broke, and the child was expelled, and fell on the floor. She states positively she had no pain in the loins, nor bearing-down pains, previous to the expulsion of the child. The author considers the following facts established by the case:—

1. That pregnancy may occur, and nearly reach its termination, without many of the ordinary signs.

2. That the arteries may contract, like other hollow muscular organs, without the consciousness of the mother,

3. That rupture of the funis is attended with little or no bleeding.

The practical doctrine he infers from it is, that in case of illegitimate births occurring suddenly, and where the child is found dead, the circumstances should be of a very decided character before the guilt of infanticide be fixed on the mother.

London and Edin. Monthly Journal of Med. Science, July, 1842, p. 610.

[Another case somewhat similar to the above, is related by Mr. Cripps, of Liverpool, as follows:]

On Thursday last, at twelve, p.m., I received a message from Mrs. C., living at 4, Tempest Hey, requesting me to hold myself in readiness, as she might soon require my assistance. On enquiry, I learnt that "the waters had just broken, but that there had been no pain:" deeming it prudent, however, under these circumstances, to know the presentation, I went with the messenger, and found my patient (who was a very slender, though healthy-looking, young woman, ætat. 20) fast asleep. On awaking her, she informed me she had been perfectly well during the day, and had been out until half-past ten. At eleven she went to bed, and soon fell asleep, from which she was aroused by a "gush of water," unaccompanied by pain: it being her first labour she was a little alarmed, and sent a message to her mother, who immediately dispatched the information to me. On examination I found the presentation natural, the membranes ruptured, and the os uteri dilated to the size of a shilling, but no indication of uterine action. I accordingly left, requesting the nurse to send as soon as any "pains" should come on. Between three and four on the following morning (happening to be sent for to see a person in the neighbourhood), I called, and found that she had slept soundly during my absence, but was occasionally disturbed by cramps in her legs, but still no pain whatever in either her back or abdomen. I now, to my surprise, found the *dilatation almost complete*; the finger receiving a sensation of continuous propulsion, without paroxysm or intermission. This singular feature in the case induced me to retain my hand *in situ*; which I con-

tinued to do until the child (a full-grown living boy) was born, which occurred in little less than half an hour. Ten minutes previous to this she said she felt "as if something were pressing down, and thought she wanted to go to the night-chair." This sensation, with the exception of the before-mentioned cramps in her legs, was the only approach to pain or inconvenience which she experienced from first to last: indeed, during almost the whole period of labour (if, in this case, the term be not a misnomer) she was asleep. About five minutes after the birth of the child the placenta was expelled, without the slightest effort. On leaving her, she very innocently asked me if she might not get up on the following morning, as she felt as well as ever she did in her life; and I am happy to add, she has so continued up to the present moment.

Lancet, June 11, 1842, p. 367.

87.—*Extirpation of the Uterus.* By M. ROSSI. A woman of a feeble constitution had a good delivery; and the placenta also came away easily.

The midwife who attended her having pushed her hand into the vagina felt a tumour which she mistook for a second child. She accordingly pulled with such force at this tumour, which happened to be the uterus itself, that she tore it from its attachments, and then, by means of a knife, separated it from the vagina and removed it entire. The woman, however, recovered in about thirty days. M. Rossi, who read the history of the case before the medical section of the Congress at Florence, exhibited the uterus which was thus removed. He was far, however, from thinking that the same success would attend the removal of the entire uterus in cancerous affections of that organ, as, in addition to the real difficulties and dangers of the operation, it was often difficult to tell how far the neighbouring organs were affected, or whether the disease might not return.

Edinburgh Medical and Surgical Journal, July 1842, p. 262.

88.—*On Puberty in the Negress.* It is a common opinion generally admitted all over Europe, that puberty occurs earlier in hot climates than in those lying within the temperate zone. Müller says, that it is stated, that in the hot regions of Africa, the changes of puberty take place in the female sex as early as

the eighth year, and during the ninth year in Persia. Young Jewesses are also said to menstruate earlier than other females in our own country. This opinion Mr. Robertson, of Manchester, has essayed to controvert, in the belief that it was no other than a vulgar error. To enable him to obtain the necessary information with respect to the negress, Mr. Robertson applied to the superintendents of the Moravian missions in Antigua and Jamaica, by whom registers of births had been kept, the registry being important in fixing the date of the first appearance of the catamenia. From these gentlemen he received the information he desired, and which confirmed him in the belief that menstruation does not commence earlier in the negress than in the white. Out of 21 cases, menstruation appeared in one aged 16, in three at 15, in three at 14, in three at 13, and in two at 12; while it had not appeared in one aged 14, in two aged 13, in one aged 12, in one aged 11, one aged 10, one aged 9, and two aged 8. It is further added, that many cases of negresses, from 8 to 11 years of age, who have not yet had any menstrual secretion, might be added.

Provincial Medical and Surgical Journal, Aug. 13, 1842, p. 382.

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89.—*Placenta retained eleven weeks.* By Dr. SCHÖLLER. A poor woman, 37 years old, having overexerted herself, was taken in labour in the fifth month of her second pregnancy. A midwife who was summoned tore the funis in her endeavour to remove the placenta, and an accoucheur who was then sent for could not succeed in extracting it. The woman now resumed her usual occupations till she was compelled to seek medical advice by the occurrence of hemorrhage from the uterus.

Ten weeks after her miscarriage she applied to Dr. Schöller, who on making a vaginal examination found the cervix uteri thick, the os sufficiently open to admit the finger, and the uterus itself felt large and as though it contained a foreign body. The woman was ordered to remain in bed, and to take gr. x. of ergot of rye every two hours. After the administration of twelve doses pains like those of labour came on, and were followed by the expulsion of coagula mixed with fibrous and membranous matters, and having a very offensive odour.

Dr. Schöller now fancied that the case was at an end, and supposed that this was an instance of real absorption of the placenta, but after the lapse of some days, having administered

a purgative, pains came on in the abdomen and recurred periodically for some hours, until a thick mass was expelled from the uterus. This mass was ascertained to be the placenta, which had not undergone the slightest decomposition, was hard, surrounded by a coating of fibrine, and shrunk to the size of half a goose's egg. On a section it presented the peculiar structure of the placenta. The patient did well.

The case is interesting in connexion with the question which has been much debated, of the occurrence or non-occurrence of absorption of the placenta in cases where it is retained for a considerable time in the uterus.

British and Foreign Med. Review, July, 1842, p. 236.

90.—*On Arm Presentation, in which Turning was impracticable.* The membranes had given way at nine o'clock of the preceding night, and Dr. Lynn found the right hand and arm protruding from the vagina, the shoulders and part of the thorax and neck of the child being firmly impacted in the upper part of the pelvis. With every justifiable effort which Dr. Lynn was capable of making, he could not succeed in seizing the feet, but got his forefinger into the ham of the right leg, as it lay bent upon the thigh towards the sacrum of the mother. The author was utterly unable to bring down the leg. He, therefore, now eviscerated the thorax, and with great difficulty succeeded in seizing the right foot, in bringing it down, and in applying a fillet round it. But although he now applied all justifiable traction, he was unable to move the child out of its impacted position. Accordingly, he let out the contents of the abdominal cavity, and with the crotchet brought down the pelvis of the fœtus. The operative part of the proceeding occupied about an hour; not half a pint of blood was lost before or after delivery. This is the third successive unnatural presentation which has occurred to this woman, who, notwithstanding, has made an excellent recovery.

Ibid, Oct. 1842. p. 582.

91.—*On Hæmorrhage after Labour, complicated with Disease of the Spleen and Kidneys.* By JOHN C. W. LEVER. [Dr. Lever was engaged to attend a lady in her first confinement. Two years before, whilst residing in Lincolnshire, she was attacked with intermittent fever of the tertian type, from which

she recovered very slowly. On Dr. Lever's first interview, she complained of great pain in the region of the spleen, which was enlarged. In due time labour came on, and the child and placenta were expelled: the womb remained contracted for about an hour and a half, when a bandage was placed over the abdomen. Some time afterwards, however, although little blood had escaped from the vagina, she was pale and nearly in a state of syncope; the womb had become distended, and several large coagula had been forced out: the womb, however, remained larger than usual. On the fourth day the patient had a severe rigour, which lasted above half an hour, and was followed by considerable re-action. This was repeated on the two following days, and with some irregularity for several days afterwards. Bark and hyosciamus were given, and the rigours were diminished in power.

From this, and some other cases, Dr. Lever draws the following conclusions:]

1st, That in females affected with enlargement or disease of the spleen the uterus is predisposed to dilate, and therefore admits of the effusion of blood into its cavity.

2dly, That the blood so collected, coagulates, and excites considerable constitutional irritation, as marked by the accession of rigours, fever, &c.

3dly, That the fever so produced, in course of time, (varying in different cases,) assumes the intermittent type, especially when the patients have previously suffered from ague. And,

4thly, That such intermittent fever is curable by the same remedies as are successful in the treatment of pure and uncomplicated ague.

Guy's Hospital Reports, Oct. 1842, p. 329.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY.

92.—ON THE SOURCE OF ANIMAL HEAT.

By PROFESSOR LIEBIG.

[We extract the following from a very interesting "Report on the present state of our Knowledge respecting Respiration and Animal Heat, and on Professor Liebig's new Chemico-Physiological Theory, by Robert Dundas Thompson, M.D."; and would strongly advise such of our readers as are interested in such matters, to refer to the detailed account in the Brit. and For. Medical Review, for July, 1842.]

Absorption of nourishment and of oxygen are the first conditions for the sustenance of animal life. During every moment of his existence man imbibes oxygen by his respiratory organs. According to Menzies, a human adult takes up from the atmosphere 850 lbs. of oxygen during the year; and yet at the end of that period his weight remains perfectly unchanged, or only differs perhaps by a few ounces. What becomes of this enormous quantity of oxygen which is thus consumed, is a natural subject of inquiry. No part of this oxygen remains in the body, but it is again discharged under the form of a compound with carbon or hydrogen. The carbon and hydrogen of certain constituents of the body have united with the oxygen absorbed through the lungs and skin, and are expelled in the shape of carbonic acid and water. If we consider, with Lavoisier and Seguin, the quantity of oxygen consumed by an adult daily to be $30\frac{1}{2}$ oz. = 15,661 Fr. grains, and reckon the quantity of blood 24 lbs., of which 80 per cent. is water, it follows that to turn the whole of the carbon and hydrogen of the blood into carbonic acid and water would require 66,040 Fr. grains, or

upwards of 120 oz. of oxygen; and this operation would be completed in four days and five hours. The food supplies the carbon and hydrogen required in this process. From a carefully conducted set of experiments made upon 856 soldiers, Liebig infers that an adult takes up daily 13 oz. of carbon. This was determined by weighing the food and fæces daily for a month. The fæces amounted to 7 oz. daily: they contained 75 per cent. of water, and the dry residue $42\frac{1}{4}$ per cent. carbon, 13.15 per cent. of ashes; 100 parts of fresh fæces, therefore, contain 11.31 of carbon; or very nearly as much as an equal quantity of fresh meat. The 13 oz. of carbon which are daily taken into the system are discharged by the skin and lungs in the form of carbonic acid. For their conversion into carbonic acid these 13 oz. require $34\frac{3}{4}$ oz. of oxygen. According to the experiments of Boussingault, a horse takes up, in 24 hours, $74\frac{1}{2}$ oz. of carbon, and a milch cow $66\frac{1}{4}$. To convert these into carbonic acid the horse requires from 13 to 14 lbs.; and the cow from 11 to 12 lbs. of oxygen. Now as none of the oxygen is thrown off from the system in any other form than that of carbonic acid and water, and as the carbon and water are derived from the food, it follows that the quantity of nourishment required for the system is in direct proportion to the quantity of oxygen taken up. Two animals which consume in equal periods of time unequal quantities of oxygen by the skin and lungs, require in the same proportion an unequal weight of food. In equal periods the consumption of oxygen depending on the number of respirations, it is clear that in one and the same animal the quantity of food digested varies according to the strength and number of the respirations. A child whose respirations are more frequent must require proportionally more nourishment than an adult, and can less easily bear hunger. A bird dies from want of food on the third day. The serpent which when placed for an hour under a receiver consumes scarcely so much oxygen as to enable the resulting carbonic acid to be detected, lives for three months and even longer without food. In a state of rest the number of respirations is less than when the body is actively employed. The quantity of food required in both circumstances must bear the same proportion. An excess of food and a deficiency of inhaled oxygen (or exercise), as well as great exercise (which enforces a greater imbibition of nourish-

ment) and weak digestive organs, are incompatible with each other.

The quantity of oxygen, according to the view of Liebig, which an animal absorbs in the lungs is not altogether dependent on the number of respirations, but it is closely connected with the temperature of the inspired air. The cavity of the chest of an animal remains always possessed of the same capacity; at each respiration the same volume of gas enters. But the weight of this volume, and therefore the weight of the oxygen contained in it, is not always equal. When an adult breathes 46,037 cubic inches of oxygen of the temperature 77° , the weight of the oxygen amounts to $30\frac{1}{2}$ oz. But if the same volume of oxygen be breathed at the temperature of 32° , the weight of oxygen will be $32\frac{3}{4}$ oz. In summer and in winter, at the Pole and at the Equator, we breathe the same bulk of air; and while in summer we inhale in an equal number of inspirations $29\frac{1}{2}$ ounces, the quantity of oxygen inhaled at 32° is $32\frac{3}{4}$ ounces; in Sicily (at 95) $26\frac{3}{4}$ ounces; at 14° , $33\frac{3}{4}$. At a lower temperature we expire more carbon than at a higher temperature, and we must in the same proportion employ more or less carbon in our food; in Sweden more than in Sicily; and in Germany an eighth part more in winter than in summer. Even in comparing equal quantities of food in cold and warm countries, we find the quantity of carbon to be very unequal. The fruits which the inhabitants of the tropics employ contain in the fresh state 12 per cent. of carbon; while the fat and oil of the Esquimaux contain from 66 to 80 per cent. of carbon. There is no great difficulty in practising moderation in warm countries or in enduring hunger for a considerable period under the equator; but cold and hunger soon produce death. According to Liebig, therefore, the reciprocal action of the constituents of the food and of the oxygen disseminated through the circulation in the body is the source of animal heat.

All living beings whose existence depends upon their absorption of oxygen, are dependent for one source of their animal heat on the atmosphere which surrounds them. This truth applies to all animals. It extends to the germinating seed, to the flowers of plants, and to fruits which are attaining maturity. Heat is only evolved in those parts of animals to which the arterial blood and the oxygen imbibed by respiration are distri-

buted. Hair, wool, and feathers possess no peculiar temperature. The higher temperature of animals, or in other words, the greater extrication of heat in animals, is always the consequence of a combination between a combustible substance and oxygen. For in whatever form the carbon combines with the oxygen, the act of combination cannot take place without the evolution of heat. Whether the union is effected slowly or with rapidity, the resulting heat is ultimately exactly the same. The carbon of the food which is converted into carbonic acid in the bodies of animals must evolve the same amount of heat as if it were burned in the air or in oxygen gas. Animals which breathe rapidly, and therefore consume much oxygen, possess a higher temperature than those which breathe more slowly. The temperature of a child is $102\frac{1}{2}^{\circ}$, that of an adult 98 to 100° . The heat of a bird is 106 to 109° , and is greater than that of mammiferous animals, which have a temperature varying 99 to 106° ; or than that of fishes, whose heat exceeds that of the surrounding water in which it is immersed by only a degree or two. All animals are warm blooded, but it is only in those which respire by lungs that we find their peculiar temperature completely independent of the temperature of the surrounding media. An animal is a heated body which is acted on by the surrounding atmosphere, as all heated bodies are; it imbibes heat when the surrounding atmosphere is hotter than itself, and it gives out heat when the atmosphere is colder. It hence follows that at the Pole, with the temperature below zero, the loss of heat must be much more rapid than at the equator. Yet the blood of the Esquimaux and that of the inhabitants of the tropics possesses the same temperature—a clear proof that the heat must be renewed more quickly in winter than in summer, and more rapidly at the Pole than at the Equator. In different climates it is obvious that the quantity of oxygen consumed in respiration must depend on the temperature of the external air. With the loss of heat by cooling, the quantity of respired oxygen increases. The carbon and hydrogen necessary for combination with the oxygen must vary in a similar proportion. It is clear that the compensating heat will be produced by the reciprocal action of the constituents of the food which combine with the inspired oxygen.

The animal body may in some respects be compared to an oven which we supply with combustible materials. In like

manner, whatever forms the food gradually assumes in the body, and whatever transformations it may undergo, the last alteration is a conversion of its carbon into carbonic acid, and its hydrogen into water; while the azote and unburned carbon are excreted in the urine and fæces. To retain the temperature of an oven constant, it is necessary to supply combustible materials in unequal quantities, according to the changes of the exterior temperature. In relation to animals the food is the combustible matter; by the due access of oxygen and the oxidation of the food, heat is evolved. In winter, when by movement in colder air, the quantity of the inspired oxygen increases, the necessity for nutriment rich in carbon and hydrogen varies in the same proportion; and in compensation for this necessity we obtain the most perfect protection against the severest cold. A hungry man shivers; and the animals of prey of northern climates are more voracious than those of southern countries. Our clothing is merely an equivalent for food; in proportion to the warmth of our clothing the necessity for eating diminishes. The quantity of food, therefore, which is used depends on the number of respirations, on the temperature of the air which we breathe, and on the quantity of heat which we give out to the air. No isolated influence can alter this law. The European, when residing in tropical countries, endeavours in vain to stimulate his organs with powerful condiments to imitate the appetite which he indulged in at home. English patients, whose digestive organs are out of order, are sent to southern countries, where the quantity of inspired oxygen is diminished and the nourishment of the body proceeds with less labour to the organs of assimilation. In summer the most prevalent complaints in Germany are liver-diseases (carbonaceous diseases;) in winter lung diseases, (oxygenous diseases.)

The whole process of respiration is clearly exhibited when we take a view of the condition of a man or animal under abstinence from all food. There will be, as before, oxygen abstracted from the air, and carbonic acid and water expired, because the number of respirations remain unaltered. We know with precision from whence the carbon and hydrogen emanate; and with the continuance of the abstinence we see the carbon and hydrogen of the body diminishing. The first effect of hunger is the disappearance of the fat. This fat can be detected neither in the scanty fæces nor in the urine; its carbon and hydrogen are

thrown off by the skin and lungs in the form of a compound with oxygen. It is obvious that these constituents have served for the purposes of respiration. Every day $32\frac{1}{2}$ oz. of oxygen are inspired, and these must remove their equivalents of carbon to form carbonic acid. When this combination ceases to go on respiration terminates—death has taken place. The time required for starving an animal to death depends on its fatness, on the state of its activity, on the temperature of the air, and lastly on the presence or absence of water.

In all chronic diseases death occurs from the same cause—from the action of the atmosphere. When the materials fail which are destined for the sustenance of respiration in the organism; when the organs of the sick refuse to perform their functions; when they lose their capacity to transfer the food into that state necessary for its combination with the oxygen of the air—then their own substance, the fat, brain, muscles, and nerves will be attacked. The peculiar cause of death is, in this case, the process of respiration, the influence of the atmosphere.

Oxidation, not the nerves, the cause of animal heat.—None will deny the importance of the nervous system in the process of respiration, for no change of state can occur in the animal economy without the influence of the nerves. By their action the intestines bring the combustible materials into a condition fit for their combination with oxygen; and in the absence of their functions the whole act of the imbibition of oxygen must assume another form. Yet it cannot be doubted that the influence of the nerves in respiration, and in the production of animal heat has been much overrated. Liebig even goes so far as to declare that the idea of the evolution of animal heat by the action of the nerves is an absurdity; for if we exclude chemical action, or changes in the arrangement of the elementary particles as a condition of nervous agency, it means nothing else than to derive the presence of motion, the manifestation of a power, from nothing. But no power can come of nothing.

That the quantity of heat evolved by the combustion of 13·8 oz. of carbon is amply sufficient to account for the temperature of the human body, may be readily gathered from the employment of numbers. An ounce of carbon burned would evolve 14207° , and 13·8 oz. would therefore give out $197477\cdot3^{\circ}$. This would suffice to boil 136·8 lbs. of water at 32° , or to con-

vert 24 lbs. of water at 98° into vapour. If we consider then the quantity of vapourized through the skin to be in 24 hours 48 oz. (3 lbs.), there will remain 146380° of heat which are dissipated by radiation, by heating the expired air, and by the excrementitious matters. Liebig considers that experiments made upon the quantity of carbonic acid expired by the usual tests are of no value; because so much depends upon the density and temperature of the air, and other circumstances, that it is impossible to calculate accurately. The degree of motion, labour, or exercise, the amount and quality of the food, the comparative warmth of the clothing, and also the time when the food is taken, are important elements in this mode of investigation. Liebig prefers the method already referred to, by determining the composition of the food and that of the excretions. Prisoners in the house of correction at Marienschloss, where labour is enforced, consume $10\frac{1}{2}$ oz. of carbon daily, while in the house of arrest at Giessen, close by the Hessian laboratory, the consumption of carbon is only $8\frac{1}{2}$ oz. The quantity consumed by soldiers engaged in healthy exercise, we have already stated to be 13.8 oz., while in a family of five adults and four children, the average daily consumption of carbon for each was $9\frac{1}{2}$ ounces.

British and Foreign Medical Review, July 1842, p. 298.

[Dr. G. F. Collier has disputed the originality of this theory of Liebig's in a letter in the *Lancet*. He advanced the same opinions so far back as 1834, which were published in 1835, in "Sir John Ross's appendix to the narrative of a second voyage," &c. &c. See *Lancet*, Aug. 20, 1842, p. 724, and Sept. 24. p. 883.]

93.—INGENIOUS THEORY RESPECTING THE USE OF THE SPLEEN AND VENA PORTÆ.

By Dr. HARGREAVE, Physician to the City of Dublin Hospital, and Professor of Anatomy in the School of the Royal College of Surgeons in Ireland.

[The following ingenious theory respecting the uses of parts which have excited so much controversy, is given by Dr. Hargreave.]

To establish the correctness of these inferences, it will be

necessary to take a review of the anatomy of the vena portæ, particularly in relation to its hepatic and splenic branches, also of the spleen itself. The abdominal portion of the vena portæ is derived principally from three great trunks, the superior and inferior mesenterics, and the splenic vein, besides a number of minor ones received from the pancreatics, gastrics, duodenals, and from the vasa brevia veins. The origin and formation of these veins present nothing unusual from the other veins of this system, with the remarkable exceptions of the splenic, and vasa brevia veins of the stomach: the former, when traced into the spleen, divide into large branches, whose parietes are perforated by large and numerous foramina, which open directly into the cellular structure of the spleen; when the more minute veins are examined, those openings become larger, until finally the veins cease to present any thing of a cylindrical appearance, the parietes of the vessels separating into filaments which do not differ from the parietes of the cells of the spleen, with which they are seen to be continuous. Such a mechanical provision in the splenic veins must admit a free exit to and from their interior into the structure of the organ from which they arise.

The vasa brevia veins are remarkable for the presence of valves in their structure, which open from the stomach towards the splenic vein with which they freely communicate; admitting, by such a mechanism, the free passage of absorbed fluids from the stomach into the splenic vein, and preventing any reflux of the contents of the latter vessel into the stomach. No other vessels entering into the formation of the vena portæ, either as regards the abdominal or hepatic portion of its ramifications, present scarcely a trace of a valve.

When the divisions and communications of the hepatic portion of the vena portæ are examined, it is seen that it divides into two sets of branches—one of them, and the most delicate, are distributed to the pori biliarii, and ramify in the cortical substance of the liver—the other set, by far the most numerous and the largest, anastomose freely with the branches of the hepatic veins by foramina of a line in diameter (Meckel); which explains the extreme facility with which the hepatic veins can be injected from the porta, and the latter vessel from the former.

Such a distribution of the vessels of the porta, in its course through the liver, and communications with the spleen by the

large splenic vein, indicate the value of this part of the animal economy in affording relief to the cardiac and pulmonary circulations in cases of any irregularity occurring in the course of the blood through the right side of the heart into the lungs, and from them to the left auricle and ventricle. If any impediment is presented to the free passage of the blood through the channels just mentioned, either in consequence of disease, or from too accelerated a circulation dependent upon any cause, the blood is capable of being regurgitated into the large hepatic veins, which offer every facility for such a course by the numerous and wide orifices opening, almost directly, into the right auricle of the heart, by their permanently patulous mouths, rendered complete by the intimate adhesions between the parietes of the veins, and the dense firm structure of the liver; finally, the reflux of the blood into these veins is favoured in a most remarkable manner by the complete absence of valves.

From the hepatic veins the blood is conducted in its retrograde course into the large anastomosing veins of the vena portæ; while by the trunk of the last vessel it flows along the principal branches of the porta, chiefly into the splenic portion. Should the cause producing the regurgitation of the blood act very energetically, and for any length of time, the blood is shed from the splenic vein into the texture of the spleen, which can accommodate a large quantity of it, where it finds a temporary reservoir until the heart and lungs are relieved from the causes which produced the irregularity in the flow of blood through them, and allows it to resume its usual course.

To accommodate such derivations in the healthy condition of the system, we perceive the necessity of the non-existence of valves in the hepatic and portal veins to permit the reflux of blood through them in the normal condition of the circulating organs. Of what greater value must not such an arrangement be in the abnormal condition of these organs to relieve them from a congestion of blood, which, if long continued, must be attended by very distressing, if not fatal symptoms.

From the structure of the veins now mentioned, it is a self-evident inference that the liver in the first instance serves as a diverticulum to the heart and lungs in the altered states of their circulation, and, if necessary, the blood so diverted from its usual course, will pass from the venæ cavæ hepaticæ into the porta, and thence into the entire of its ramifications, with the

single exception of the vasa brevia veins, which, being supplied with valves, will oppose any regurgitation of blood into their interior; the cause continuing to act which produces the regurgitation of the blood it will ultimately find a passage into the spleen, whose cellular structure, together with the peculiar mechanism of the splenic vein, readily admits the blood in the reflux course that has been impressed upon it; and to be shed from the vessels into the spleen, in which particular, it, as an erectile tissue, differs in a very evident manner from the other erectile structures found in the system, which are formed of a congeries of arteries and veins, chiefly of the latter.

The spleen is not alone subservient to the organs now mentioned as an occasional reservoir for their blood; but in certain conditions of the system performs the office for the great systems of the mucous and cutaneous membranes. In cases where the blood is driven from these membranes, either in consequence of cold, or of rigours affecting the general system, it is located for the time being in the spleen; and is subsequently taken up from it by the veins and returned to the general circulation, when the balance is restored to the blood circulating in the mucous and cutaneous membranes. This opinion receives no small support by considering the pathology of intermitting fever; for after repeated attacks of this affection in the same individual, the spleen is always found hypertrophied in consequence of the repeated lodgment of blood in it, which produces such a degree of vital exaltation in it as to cause an increase of growth; or this increase in size can be explained in the following manner:—The blood being at rest in the cells of the spleen, may in part coagulate, and by the repetition of such phenomena, the organ ultimately enlarges and becomes solidified.

That the spleen serves such a function in the adult to the organs now indicated, is corroborated by contrasting it with that of the fœtus; at which period of existence the spleen is not only comparatively very small, but its vessels also partake of this diminution in size, the artery being much less than the hepatic, and the vein of corresponding diameter; it remains thus arrested in its development till after birth, as prior to this period the spleen is not required as a diverticulum for either the heart, lungs, or liver, whose functions are at this time of life comparatively inert, the lungs receiving but a small supply of blood, and the heart not exhibiting the complexity of structure and function

which it does in after life; and the liver not so necessary to relieve the heart or lungs of an accumulated quantity of blood which passes with difficulty through them under certain conditions in extra-uterine life.

During foetal life the relations of the spleen to the mucous and cutaneous membranes are not of that important value to afford *occasional* accommodation to the blood that is normally sent to these membranes; as the temperature of the foetus is always equable, not dependent upon its own resources, nor directly liable to atmospheric vicissitudes, but is derived from the mother, consequently no irregular distribution takes place in the cutaneous circulation of the foetus connected with any alteration in its temperature.

That the spleen is in this way closely allied to the two great tegumentary membranes, is I conceive supported by attending to the anatomy and functions of this organ in fishes, in which it is not alone very small, but is also supplied with a minute quantity of blood; its veins are in proportion to the size of the artery; while in these animals their temperature is seldom liable—indeed, I believe, never—to the sudden variations that terrestrial animals are subject to.

The relative smallness of the spleen in the foetus, besides being subservient to the apparatus already indicated, holds an important relation to the stomach, which exhibits none of those alternations in function that it does in after life, consequent upon the process of digestion: from which it follows as a sequence, derived from the experiments of Bichat, Beclard, and others, that the circulation through the spleen is uniform and regular, offering none of the changes which are witnessed in it during extra-uterine life, dependent upon the varied conditions of the stomach, as connected with its period of distention and emptiness, also of its exalted vitality during the digestive process.

I scarcely consider it necessary to allude to the opinion of Broussais, who considers the spleen to serve as a diverticulum to the stomach and intestinal canal: or to Mr. Hodgskin, who looks upon it in the same manner, allowing it but a limited range.

Tiedemann and Gmelin attribute to this viscus a much higher and more important function in the animal economy than that of an occasional reservoir for the blood under certain conditions of the system; they consider it as a large lymphatic gland,

and an appendage to the lymphatic system; secreting from the arterial blood a fluid of a reddish colour, which possesses the property of increasing the coagulating powers of the chyle, and rendering it of a deeper colour; their opinion is founded upon the immense number of lymphatic vessels which belong to the spleen, which they suppose convey this fluid to the thoracic duct.

The German physiologists have adduced one experiment in support of their theory; namely, having extirpated the spleen from a dog, after having recovered from the operation he was killed, and on examining the physical properties of the chyle in the thoracic portion of the thoracic duct, it presented a whiter colour than usual, and did not throw down as abundant a clot as it did in animals which were not deprived of their spleen.

Objections, and those of not a trifling character can be brought against the hypothesis of the last named authorities; in structure the spleen does not present the least similarity to a lymphatic gland; the lymphatics which are distributed to it anastomose with the arteries, so it is not too much to infer that they contain a more or less quantity of blood received direct from the arterial branches distributed to the organ, which will tinge the chyle flowing through the thoracic duct in the normal condition of the system.

From such a communication between the lymphatics and arteries of the spleen, it follows that after the spleen has been extirpated, the source from whence the colouring matter of the chyle is derived being removed, it will no longer be tinged, as it would be, if the organ still remained in the system of the animal; these facts appear to be sufficient to disprove the hypothesis of Tiedemann and Gmelin.

The splenic vein, in addition to its serving the office of returning the blood from the spleen, and under certain conditions to permit the reflux of it into the spleen, answers the purpose of conveying the fluids received into the stomach almost directly into the heart by the medium of the vena portæ and hepatic veins, as the slightest attention to the anatomy of these vessels will establish.

The absorbing powers of the veins being now fully admitted, it follows, when fluids are introduced into the stomach, they are taken up by the vasa brevia veins, and conveyed by them

to the splenic vein, by which they are transmitted to the vena portæ, and through the branches of it, which inosculate with the large hepatic veins by the large communications already mentioned, directly to the heart. Such an anatomical arrangement is sufficient to explain the rapid absorption of fluids from the stomach, and their equally rapid discharge from the system by the urinary apparatus, under the designation of "*urina potus*," without being under the necessity of seeking for any other explanation of a fact of such frequent occurrence. This anatomical structure permits us also to understand the cause why the liver becomes so frequently diseased in those individuals who indulge much in the use of ardent spirit; for it is absorbed direct from the stomach in its almost undiluted state, and is transmitted by the splenic vein into the porta to the liver, where it acts in this concentrated state upon the structure of that organ, and produces the morbid alteration known by the term *cirrhosis*, or the *whiskey liver*. This manner of inducing the disease in question, by the too great indulgence in alcoholic fluids, seems to me nearer to correctness than the opinion maintained by Andral, of chronic inflammation being excited in the duodenal mucous membrane by such pernicious habits, and thence extending along the ductus communis choledochus to the liver, and finally producing the disease.

It also appears to follow from this view of the anatomy of the parts in question, that vinous fluids are absorbed from the stomach, and carried directly by the splenic vein into the porta, and from it so quickly into the general circulation, as in this way to affect the sensorium commune without the intervention of the nervous influence. If the effect solely depended upon the nervous system, it should be more instantaneous than it is; that such is not the case is contradicted by the experience of almost every individual, which teaches that a short time elapses before the decidedly exciting effects of the vinous fluid is rendered evident on the system.

When it is stated that the spleen serves so many purposes in the animal economy, as a diverticulum to the heart, lungs, and liver, also to the stomach, and in some cases to the cutaneous and mucous membrane; and that the splenic vein is of such importance in conveying fluids from the stomach into the general circulation. A natural question will suggest itself, how have animals lived in the enjoyment of good health, from which

the spleen had been extirpated? If they recovered from the operation, of which there are many examples. To this question it can be answered, that such an experiment proves the spleen not to be a vital organ; it can also be adduced as an instance of one of the beautiful examples of the compensating powers which the system possesses within itself, as will enable it still to maintain healthily, the functions necessary for the well-being of the animal. It is scarcely necessary to cite any proof of such compensating power, which is admitted to exist between the skin and the kidneys in the normal state of the system, and between the lungs and uterus, when the former assume vicariously the function of the latter, and produce a monthly secretion to compensate for the menstrual flux.

What system acts the part of a compensating organ in the animal from which the spleen has been extirpated, and which serves the purpose of a sanguineous recipient to relieve the heart, lungs, and liver in their disordered circulation? In such cases, we still have all the vena portæ, (with the exception of that portion of the splenic vein which is given to the spleen) to serve such an office to the animal to compensate for the loss of the spleen.

It may also be asked, should not the spleen be hypertrophied in those instances where there is an excessive development of tubercles in the lungs, which must act mechanically in retarding the pulmonary circulation: the consequence of which should be a remora in the blood flowing through the liver, and finally in the spleen; this cause existing for sometime ought to produce an enlarged condition of it.

Such a result, would, in all probability, be the case, if the individual suffering from this disease was able to take such a degree of exercise, as to send the blood rapidly through the pulmonary circulation, where, being impeded by the tubercular deposit compressing the lungs, and preventing the blood flowing with sufficient rapidity through them, some portion of it would regurgitate, and be deposited for some time in the spleen, so as ultimately to give rise to an hypertrophied condition of the organ.

Dublin Medical Press, Aug. 10, 1842, p. 81.

RETROSPECT.

WHEN the reader has carefully read the foregoing pages, he must acknowledge that the practical improvement and suggestions in the treatment of disease which have been put on record within the last six months, have been neither few nor unimportant. It has been our endeavour to present these in as concentrated a form as they would properly admit of. Some of our articles have been unavoidably lengthy on account of their importance and interest: but we think that nothing superfluous has been introduced into any part of the present volume, and nothing but what is of a truly practical and useful tendency.

One of the most useful remedies in medicine is the nitrate of silver: whether we regard its use externally or internally, we must look upon all improvements in its mode of application as very desirable: the form of *nitrate* as an external application has not been improved, neither is it necessary, as its qualities in the present form are such as we require. As an *external application*, however, nitrate of silver has been greatly extended of late, and especially since some able publications on its use, in different diseases. In *stricture of the urethra*, it has long been used, acting not as is commonly supposed, by destroying the stricture, but “by inducing some change in the vital actions of the part which is followed by relaxation of the narrowed portion.” In *fissured or excoriated nipples*, it is occasionally very useful, and certainly superior in many cases to the tincture of catechu, which has lately been so praised in these affections. In *porrigo*, the solid nitrate of silver, by being well rubbed on the part, will seldom fail in either curing the affection or considerably improving it—the cauterization should be repeated at intervals of a few days. In *psoriasis* and *impetigo*, it has also been found useful; but more especially in erysipelas,

both when rubbed on the sound skin round the inflamed portion so as to separate the latter from the former, and also when rubbed all over the inflamed surface. In *affections of the mucous membrane* of the mouth and fauces, it is occasionally an invaluable application. "When the fibrinous exudation of croup commences on the surface of the tonsils and arches of the palate, its further progress may be stopped by the application of a solution composed of a scruple of nitrate of silver and an ounce of distilled water. The solid nitrate has been introduced through an aperture in the trachea and applied to ulcers on the inner surface of the larynx in a case of phthisis laryngea with apparent benefit.* A case of diphtherite illustrating its good effects on the mucous membrane of the throat is related in the *American Journal of the Medical Sciences*, for April, p. 498, in which Dr. Gibbes applied a *saturated solution* with benefit, to an ulcer half an inch in diameter, over the left tonsil and to the fauces, by means of a small sponge, which was thrust far back into the pharynx. Every application was attended with relief, and it was repeated every two or three hours when the albuminous accumulation was present. (*Art. 29.*)†

We might go on enumerating its good effects in *leucorrhæa*, *gonorrhæa*, both in the male and female, *diseases of the eye*, *variolous pustules*, *punctured wounds*, &c., &c., but our object here is chiefly to point out its advantages in those *gastric affections* which so often baffle our efforts at relief. In *epilepsy*, *chorea*, and *angina pectoris*, its good effects have been related by certain authors, but we should not depend upon its use in these cases. In affections of the stomach, however, its powers are certainly of no low order; especially where we find present, cardialgia and pyrosis, intestinal spasm followed by nausea and pyrosis, gastrodynia, irritability, accompanied with gnawing, constant pain, and nausea, &c. In all these cases we shall afford great relief by giving a quarter, half, or a whole grain twice or three times a day. But the dread of discolouration has always been a drawback to its continued use, and has prevented its being given in sufficiently large doses in many cases where the usual small doses have been useless. For this reason many attempts have been made to give it in different chemical

* See Dr. Pereira's excellent work on *Materia Medica*, p. 696.

† The different figures introduced, refer to the articles in this volume, where the subjects spoken of are more particularly dwelt upon.

combinations, and various theories have been formed respecting the process of discolouration, which is carried on in the skin. Some of these theories we have noticed in our first article; with respect to Dr. A. T. Thompson's theory, that the *nitrate* is taken into the circulation undecomposed, and arriving in that state in the capillaries is there decomposed and converted into the *chloride*, which becomes blackened; we would observe that if the nitric acid which he advises to be given with the nitrate, proves of any use, his hypothesis will be overturned; for we suspect that nitric acid will have but little influence on the action of the compounds of chlorine or the salts of silver, nor can it dissolve the white chloride or the black sub-chloride. Mr. Lane believes, in common with many other writers, that the nitrate is changed into the chloride by the free hydrochloric acid of the gastric juice, that it then becomes taken up into the circulation, and when conveyed to the cutaneous surface is converted into an *oxide* by the action of light and the strong affinity for albumen. He, therefore, *anticipates* this oxidation by giving the *oxide* of silver instead of the nitrate: and in many respects this is an improvement; especially in cases of epilepsy, chorea, &c., where we have to continue its use for a considerable time—but in gastric affections where its use need never be continued for any great length of time, we doubt whether the recent theories and new chemical combinations in which the old remedy is given, will prove advantageous. There must, however, always be a certain degree of fear and responsibility on our minds when giving this remedy, and we ought as much as possible to adopt the most prudent course: for this reason, Dr. Patterson has advised that the *ioduret* of silver be used instead of the nitrate, which he states to be equally efficacious and free from all risk of discolouration, however long continued. His theory is, that the discolouration is most probably owing to the decomposition of the chloride of silver circulating in the cutaneous tissue through the chemical action of the sun's light, and the deposition there of its *metallic basis*—and, therefore, he thinks that if we can procure a preparation of silver which cannot be acted upon by chlorine nor by the sun's light, we shall be in the possession of a perfectly safe medicine: such he esteems the *ioduret*. His observations will be found more in detail in our first article. He gives it in doses of from one-eighth to one-fourth of a grain three times a day, which proved

rapidly beneficial in gastric affections; but in epilepsy it was necessary to persevere for a considerable time in doses of one-quarter of a grain, then half a grain, and ultimately grain doses three times a day. The general dose, however, seems to have been about a quarter of a grain: and we suspect that if this preparation is not so easily acted upon by the free hydrochloric acid and chlorides in the stomach, it will be more certain in its operation and will not require the variable and large doses which the nitrate frequently requires, from its being so readily acted upon by the chlorides and free hydrochloric acid so often existing in the stomach. Before concluding our remarks on this substance, we must remember that the stomach will generally bear a much larger dose in the form of pill than in that of solution, in consequence probably of the latter acting on a larger surface. Dr. Powell found that in some cases he could give fifteen grains in the form of pill, while he found that, in solution, five grains were a full dose. These doses, however, are seldom called for. (1.)

Affections of the kidneys are perhaps occupying as much, if not more, of the attention of the profession than any other disease. Their anatomy, pathological appearances, and their peculiar uses in the system, are becoming more and more interesting and better understood: and there is no doubt that we can frequently arrive at a more accurate diagnosis respecting the generality of diseases from examining the states of the urinary excretion, than from any other single symptom. Every practitioner ought therefore to be well acquainted with the standard authors on this subject, and more especially with the writings of Dr. Prout. The deposition of *oxalate of lime* has not been particularly noticed by any author with which we are acquainted, and yet, from the observations of Dr. Golding Bird, this deposition may prove a very valuable indication of disease, and of the most suitable treatment, especially in certain obscure and tedious affections generally referred to dyspepsia, hypochondriasis, and other diseases characterised by great nervous irritability. So far from this deposit being uncommon, Dr. Bird affirms that "it is of more frequent occurrence in urine than the deposits of earthy phosphates." The way in which he detects the oxalate of lime is minutely described at page 9 of this volume: we need therefore only refer the reader to this description. It seems never to subside so as

to form a distinct deposit, remaining for days diffused through the fluid, even when present in so large a quantity that each drop of the urine when placed under the microscope is found loaded with the crystals; when these crystals have been collected in a watch glass, they remain unaltered by boiling either in acetic acid, or solution of potass, whereas in nitric acid they readily dissolve without effervescence: this is an important thing to be remembered in the treatment of these cases. Dr. Bird also observes that no instance has yet been perceived of a complication of this oxalic affection with granular degeneration of the kidneys, and in no instance has he found sugar present in oxalic urine, although he thought at first, with all other medical men, that there must be a close connexion between the presence of saccharine matter and oxalic acid. There seems every reason to suppose, however, that the oxalate of lime found in urine owes its origin to sugar, and that the origin of the evil exists in the digestive organs. It seems almost certain that in all cases where the oxalic urine is formed, there is some serious functional derangement of the digestive organs, especially of the stomach, duodenum, and liver; and that the quantity of the oxalic acid formed can be either diminished or increased very considerably by diet alone. An excess of urea, and often of uric acid, generally accompanies the formation of oxalic urine, and we may therefore suspect that the same morbid influence is connected in the formation of these substances; and as there is a very remarkable chemical relation existing between urea, uric acid, and oxalic acid, the former being readily converted into the latter, Dr. Bird suggests that the disease under consideration ought to be regarded as a form of *azoturia*, (of which an excess of urea is the prevalent indication) in which the vital chemistry of the kidney has converted part of the urea into oxalic acid. Professor Liebig traces the oxalic acid to the oxidation of uric acid, and not, as Dr. Bird does, to the re-arrangement of the elements of urea giving up at the same time an atom of oxygen. Such questions as these, however, are more interesting to the chemist than to the practical physician. Whenever a patient applies to us with symptoms for which we cannot account, such as remarkable depression of spirits with a melancholy aspect, emaciation, nervousness, hypochondriasis, general debility, irritability of temper, deficiency of sexual desires, sense of pain or weight across the

loins, with well marked symptoms of dyspepsia, it is our duty to make particular enquiry respecting the urine, as the presence of oxalic acid will at once point out to us a very important indication of treatment. The treatment will consist in removing exciting or depressing influences, protecting the skin from sudden changes of temperature, a carefully regulated diet consisting of about equal proportions of animal and vegetable food, and the administration of nitric acid or the nitro-hydrochloric acid, in small doses in some bitter infusion. Ten drops of nitric acid, and the same quantity of hydrochloric acid in an ounce of infusion of serpentaria may be given with great benefit three times a day, with a pill at bed-time occasionally, of extract of aloes, gr. ij,; conf. opii. gr. iij.—wine and beer must in general be abstained from, but if a stimulant is necessary let it be old sherry. Colchicum will be found to exercise a marked influence over the characters of the urine, exerting an immense influence over the organic system of nerves and the functions under its control: an excess of uric acid will generally be found present during its administration: and in two cases of Dr Bird's, in which oxalate of lime existed in abundance before its employment, uric acid soon appeared as a deposit and nearly entirely replaced the oxalate; but generally the cases yield rather slowly. (2.)

The general treatment of gravel has been well and briefly pointed out by Dr. Watson, in his lectures, in the Medical Gazette. We have given many of his remarks on this subject, not from any particular novelty contained in them, but because the subject of gravel, simple as it seems to be, is not sufficiently studied by the generality of practitioners, who frequently rest satisfied with observing a red deposit, and endeavouring to counteract it by giving alkaline medicines, without particularly discriminating between the different deposits which are liable to occur in the urine. It is perhaps generally known that healthy urine exhibits acid properties, turning litmus paper red; not that it contains a free acid, but that certain of the alkaline and earthy bases are not exactly neutralized, but exist in the state of supersalts. The pure lithic acid is nearly insoluble, but the lithate of ammonia is very readily soluble, and it is this which reddens the vegetable blues; and whether out of the body or within it, the lithate of ammonia will of course be decomposed if any acid be present in the urine; for which, am-

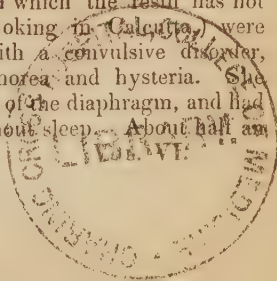
monia has a stronger affinity than it has for lithic acid, and the lithic acid will be thrown down in the form of red sand, very much like particles of cayenne pepper. If, therefore, we find the urine thick and muddy, with a reddish sediment, we may suspect that it is owing to the lithate of ammonia; the pure lithic acid at other times showing itself in the form of the fine sand above mentioned, or in larger crystals. The urine, in these cases, is more acid than usual, and gives to litmus paper a deeper shade of red; it is generally accompanied, too, by a tendency to feverish and inflammatory complaints. Alkaline remedies are in these cases called for,—the bicarbonates of soda and potash. Now, it is important to know, that the potash is a preferable remedy to the soda; inasmuch, as soda will sometimes combine with the lithic acid and form an insoluble salt; whereas, with potash, there is not this danger, the resulting salt being perfectly soluble, and passing away dissolved in the urine. Another kind of gravel or sand which is found in urine, is rather *white*; and denotes an alkaline or neutral state of the excretion, and is chiefly owing to the triple phosphate of ammonia and magnesia. It is of the greatest importance, in a practical point of view, to know that this *white gravel* generally accompanies a debilitated condition of the system. It is found in persons who have been weakened by toil and mental anxiety, or by insufficient nourishment; in persons who are cachectic, sallow, languid, and spiritless. “As the urine cools, the white sand is thrown down, and in many cases a sort of film is formed on the surface of the water. If we skim the pellicle off, by placing a bit of paper under it, and then suffer the paper to dry, we may easily see the little crystals.” The urine soon grows putrid, and even ammoniacal, in smell. Although the urine, even in these cases, is often *very slightly* acid, yet it is sometimes so alkaline as to turn turmeric paper brown; and we must be careful how we depress the vital powers. We must abstain from giving alkaline or saline draughts, colchicum and mercury, from active purgatives and bleeding; and we must counteract the phosphatic diathesis by generous diet, tonic medicines, bark and wine; the muriatic and nitric acids are given with vast advantage, and opium has a wonderful effect in assisting these medicines to restore the acid properties of the urine. We should be particularly aware of the effect of these remedies, as it is generally admitted that it is a much easier thing to ren-

der acid urine alkaline than to render alkaline urine acid. The *oxalic* diathesis is another common form of this affection, in which there is a tendency to the formation of the oxalate of lime, or *mulberry* calculus. This kind of excretion we have already noticed. In the treatment of all these kinds of gravel we should never forget the necessity of well regulated exercise, which has at all times a wonderful effect on the kidneys, especially when the lithic acid diathesis prevails: diet, also, is equally important. (3.)

The treatment of acute pneumonia, from the prevalence and danger of that affection, ought to be thoroughly understood by every practitioner. It is briefly and judiciously described by Dr. Hughes, who is accustomed "to bleed the patient to syncope; to administer a pill containing half a grain of opium, and a quarter of a grain of tartarized antimony, with one or two grains of calomel every three, four, or six hours, according to the severity of the symptoms. With this is given a saline mixture containing twenty or thirty minims of antimonial wine." Venesection is repeated in a few hours or days if the symptoms return; but of course in a cautious manner, or probably by cupping or leeches instead of by the lancet. M. Louis asserts that early blood-letting never arrests the disease, and that it only shortens its duration by four or five days. We feel convinced, however, that free blood-letting ought seldom or never to be neglected, as distension of the great pulmonary plexus of blood-vessels is the first condition of the disease. We doubt the propriety of invariably giving the opium recommended by Dr. Hughes:—no doubt it is frequently advisable, but we should prefer, if possible, depending upon blood-letting, tartarized antimony and mercury without the aid of opium. The peculiar effect of tartarized antimony in subduing inflammation, independent of its emetic, nauseating, or diaphoretic powers, was first pointed out by Dr. Marryatt, of Bristol: and in this remedy we certainly possess a power which is not duly appreciated by the profession. Laennec gave the medicine in doses of from one to two and a half grains, but in this country it is generally given in doses of from half a grain to two grains every second, third, or fourth hour, according to the severity of the symptoms. Vomiting may be produced at first, but the system soon bears the medicine without this effect being produced: in fact it is surprising what large doses may at last be

given, Laennec often giving twenty grains daily without producing sickness, pain, or diarrhœa, and even without causing loss of appetite or the power to digest the food : ten or twelve grains a day, however, are generally sufficient even in bad cases, and much smaller doses frequently suffice. We must remember, however, always to continue the medicine for some time after the apparent amelioration of the general symptoms, and it must not supersede further bleeding if more urgent symptoms require it. In the slighter cases of pneumonia, however, where the system is not in a condition to bear the abstraction of much blood, as in children, where it may be combined with bronchitis, the pure antimonial treatment is of incalculable advantage, and ought chiefly to be depended upon. (4.)

The reader will find an interesting account of the Indian hemp, by Dr. O'Shaughnessy, in article 72, of Retrospect No. II. At that time its powers had not been tested in this country. He gave this medicine with excellent effect in cases of tetanus, hydrophobia, cholera, rheumatism, and in such diseases as were attended with a high state of nervous irritability, convulsions, and pain. Its powers have since been tried by several eminent physicians, and especially by Dr. Pereira, who has published an interesting account of it in the last edition of his work on *Materia Medica*. Dr. Pereira seems to think that its powers have been overrated, as in his hands it did not produce those striking effects described by Dr. O'Shaughnessy, but attributes this failure in some measure, to the deterioration of the drug either in its passage from India or from the mode of its preparation : "ten grains of *churrus*, (which is the concreted resinous exudation from the leaves, slender stems, and flowers,) were given in fine powder to a small terrier with his food. In fifteen minutes he appeared somewhat drowsy. In fifty-five minutes he would sleep as he sat and nod forward or to one side so as nearly to fall. When roused, however, he appeared quite well, but when left alone he soon fell asleep again." In another experiment, "four grains of an alcoholic extract of *gunjah*, (which is the dried hemp plant, from which the resin has not been removed, chiefly used for smoking in Calcutta,) were given to a girl aged 14, affected with a convulsive disorder, partaking of the character of both chorea and hysteria. She was troubled with a spasmodic action of the diaphragm, and had been for several days and nights without sleep. About half an



hour after taking the third four-grain dose the spasms entirely ceased, and the patient complained of vertigo and head-ache. The pulse was ninety-three, soft and regular. She fell into a tranquil sleep in which she remained for several hours. When she awoke she had no spasms, but complained of head-ache and vertigo. Some days afterwards convulsive movements appeared in other muscles. The extract was again resorted to, but its effects were never more than palliative," although the dose was increased to thirty grains twice, and even thrice. Other experiments are related in which its effects were not obvious." (p. 1098) Its anti-convulsive powers, however, are undoubted, and we have no doubt that further experience will enhance its value in the eyes of British practitioners. In a case related by Mr. Ley, in which the slightest motion was attended with great pain and spasms of the muscles of the back, the latter being so violent as to draw the body into the form of an arch, it produced a remarkable degree of relaxation of the muscles. He gave a grain and a half of the extract every half hour, and its effects were strikingly evident after the fifth dose; the muscles became relaxed and the patient fell into a tranquil but overpowering sleep of ten hours duration; she then awoke with little exhaustion, and pleased beyond expression at the relief she had received. In a case of chorea, in a girl twelve years of age, Mr. Ley gave half a grain of the extract three times a day for three days, when the girl was overwhelmed with fear, the muscles, which had been affected with rigid spasm, became relaxed, the power of speech returned, and at the end of a week or ten days she was perfectly recovered. But although relaxation of the muscles followed the exhibition of the medicine in all cases, it did not always effect a cure of the disease which produced the muscular spasm. It generally, however, produced an alleviation of the painful symptoms. In a case related by Mr. Ley, in which a coachman, by the constant use of his arm, presented a swollen, hard, and stiff state of the muscles of that limb, with an enlarged bursa on the olecranon, three grains of the extract caused a wonderful abatement of the symptoms by the next morning, together with considerable diminution of the enlarged bursa. In another case of severe sprain of both wrists, in which the patient had lost the grasp of his hand, and where the wrists were distended with very much fluid both in the joint and under the flexor tendons, a grain of the extract was given three times

a day for three weeks with considerable relief. In a case of the *crowing respiration* in a child nine months old, the sixth of a grain of the extract was given, and the little patient fell into a tranquil sleep, and on awaking had not its usual spasmodic attack; the dose was continued three times a day for a week with very considerable benefit. Might not this medicine have been a valuable addition to the treatment of this disease, related by Dr. Marshall Hall, in article 45, p. 130? (5.)

In cases of incontinence of urine in children, which arise so frequently from either excessive irritability of the parts, or from the want of power to perform the necessary functions, Dr. Guy has found great benefit to arise from a combination of tincture of cantharides and opium, or hyosciamus, at the age of thirteen or fourteen, in the dose of four drops of the former with ten drops of the latter, four times a day, and five grains of the compound rhubarb pill, every night. This practice may be improved by applying a blister to the sacrum occasionally, and attending particularly to the emptying of the bladder at stated times. (6.)

The treatment of acute hydrocephalus in children is generally very unsatisfactory; and the want of discrimination between this inflammatory kind of disease and the hydrencephaloid affection described by Dr. Marshall Hall, which arises from exactly opposite causes, has produced the most fatal errors of treatment. In the former, depletion may be borne in the early stages to a very considerable degree even in young children: in the latter cases this depletion would certainly prove fatal, and render all subsequent treatment abortive. The usual means of treating the acute and inflammatory form of the disease is ably described by most authors, such as *blood-letting*, either by the lancet, cupping, or leeches; *cathartics*, so strongly recommended by Dr. Abercrombie in all head affections, who even says, "Although blood-letting is never to be neglected in the earlier stages, more recoveries from head affections of the most alarming aspect, take place under strong purging than under any other mode of treatment"; *cold applications*, *antimonials*, and *mercury*; but we think that the preparations of iodine have not yet had sufficient trial in this country; and if we may judge from the effects of the iodide of potassium in cases related by Dr. Roeser and Mr. Fluder, we ought to place more confidence in this remedy, in a disease which puts at defiance most of our

other preparations. We will remind the reader, that we gave an account of the effects of this medicine at page 75, of our 4th Vol., where Dr. Roeser is said to have given it with great success in a case where the child lay insensible, with pupils fixed and dilated, complete paralysis of the right side, and frequent automatic movements of the left leg and arm. A drachm of the iodide of potassium was dissolved in half an ounce of distilled water, and of this thirty drops were given every hour to a child two years old; this was continued for a week, and then for four days more, half the quantity was given. The child completely recovered. In the case related by Mr. Fluder, there was strabismus, laboured respiration, convulsions, with complete opisthotonos. He gave half grain doses every two or three hours, with complete success. He relates other cases of a similar description where the same treatment was equally satisfactory. (7.)

The value of the internal exhibition of sulphate of zinc has not yet been duly appreciated; it has hitherto been chiefly given as an astringent on the alimentary canal, checking secretion, and with a view of promoting a *constipated* condition of the bowels; in urethral and pulmonary affections, as well as a valuable emetic; but its powers in renewing the tone of the muscular fibres, and in controlling the calibre of disordered portions of the intestinal canal, in *curing constipation* where purgatives cannot be borne, instead of producing it, as most authors affirm, and in constringing the mucous follicles, and thus diminishing the secretion of gas, or quickening its absorption, have but seldom, if ever, been alluded to, by authors. Alum is given in Paris to a considerable extent in painters' colic, and its beneficial results may be owing to its local tonic or astringent effect on the bowels, which have been almost paralysed by the action of lead; and it is no doubt a most valuable tonic in these cases after the bowels have been freely opened; it produces a chronic contraction of the intestines, and may be given with this view, in 10 grain doses, three times a day. With the same view the sulphate of zinc may be administered; but the use of the latter drug may be extended to a variety of cases, and may prove a more valuable tonic in such affections than the alum; especially in flatulent affections of the colon, and in constipation. Cullen, himself, states that "flatulent symptoms are to be referred to the loss of tone in

the muscular fibres of the intestines, rather than to any fault in the digestive fluids." When we consider the happy improvements in modern medicine, in curing congestions, commonly called inflammations, by the local and direct application of stimulants, as nodes by blisters, ulcerated cornea and conjunctival inflammation by the nitrate of silver, &c., we may see how the sulphate of zinc may act upon the debilitated and distended parietes of the intestines, and on the distended capillaries which supply them with blood; and, "if the tissue of our hollow organs obeys the same laws that regulate our external parts, and Medicine will take a hint from Surgery, perhaps it may not be presumptuous to anticipate the substitution, ere long, of prompt astringents for the tedious formulæ of tonics, in certain cases of dyspepsia," &c. The sulphate of zinc should be given in the form of pill, in order to avoid its disagreeable taste, and its nauseating effects when given in solution; it should also be given upon a meal, in doses of about three grains, four or five times a day; if the stomach is very irritable, a very small quantity of opium, a quarter or half a grain may be combined with it. The colon is generally the part most implicated in flatulence and constipation; it is the part where the intestinal contents linger for hours or days, and perhaps for weeks, and therefore it is upon this part that the sulphate of zinc will especially act with advantage; and the main object being to throw at once a strong solution into the cæcum and large intestines, and since small doses only can be passed through the stomach, they must be made to succeed each other rapidly; and regarding this practice as a kind of stimulating lotion to a relaxed part, we cannot consider 20 grains, which is often as much as can be retained, as but a small quantity to be applied to the enormous surface presented by the colon. Dr. Warren, of Taunton, recommends alum whey in these cases, where a tonic colonic dyspepsia exists, in conjunction with gentian and other tonics. (8.)

Chlorine seems to be becoming a favourite remedy with many practitioners, and not without good reason, in scarlet fever and other diseases, where contagious poison may be the cause or concomitant of the affection. An easy way of preparing it is by dissolving two drachms of the chlorate of potass in two ounces of hydrochloric acid, previously diluted with two ounces of distilled water. The solution must be immediately

put into a stoppered bottle, and kept in a dark place. Two drachms of this solution mixed with a pint of distilled water, constitute the chlorine mixture, of which a tablespoonful or two, according to the age of the patient, may be given for a dose, frequently. It is probable that its disinfecting properties may in part account for its beneficial effects. The chlorine has a strong affinity for hydrogen, and it may be by abstracting this gas from its putrid miasmata, and noxious substances, that it acts so beneficially; and with this view, chlorine fumigations are so strongly recommended by Professor Daniell, on board ships destined for the western coast of Africa, (see Retrospect IV., Art. 112.) Or it may be that by the affinity of chlorine for hydrogen, the decomposition of aqueous vapour is effected; the nascent oxygen thereby oxidizing the organic matter, and destroying any deleterious effects which it might have upon the system. Either of these hypothese would explain many of its beneficial effects, and especially those experienced in cynanche maligna, in which fearful disease the system seems to be re-inoculated with the poisonous secretion from the throat. (9.)

The intimate connection between plethora and apoplexy which exists so often, has too long blinded the eyes of practitioners to the fact that exactly opposite causes may produce similar effects; and hence we too often find, that when a patient is seized with a fit of apoplexy, whatever be the cause, whether owing to plethora or exactly the reverse, the practitioner—as well as his kind neighbours—thinks he is neglecting his duty if he do not bleed the patient copiously, and employ other means of depletion. It is now, however, becoming better known, that inanition and anæmia, morbid conditions of the stomach and intestines, dyspepsia, cachexia, gout, hypertrophy with augmented impulse given to the arterial blood, or indilatation of the heart and disease of the valves impeding the reflux of the blood along the veins, may all be causes of the affection, and will require different modes of treatment. We ought to remember, in short, that apoplexy may be caused by anæmia as well as by plethora; such a case is related by the late Dr. Denman; it occurred in the midst of exhaustion from protracted uterine hæmorrhage, and a clot of blood was found in the cerebrum: another case is related by Mr Travers, which occurred under the actual use of the lancet, and during the flow of blood from the arm. Even in cases of injury of the brain, as in con-

cussion, too much venesection, may give rise to symptoms which it will be difficult to distinguish from those produced by the accident itself. Sir Benjamin Brodie remarks on this subject, "Where bleeding has been carried to a great extent, symptoms frequently occur which in reality arise from the loss of blood, but which a superficial observer will be led to attribute to the injury itself. Repeated copious blood-letting, is of itself adequate to produce a hardness of the pulse which we shall in vain endeavour to subdue by depletion." And almost every practitioner is aware, how many cases of paralysis, apparently resulting from apoplexy, arise from a waste of nervous matter, or from a too great exertion of the mental powers; "almost every act of the mind," says Dr. Carpenter, "is inseparably connected with *material* changes in the nervous system," and hence "the more prolonged and energetic the operations of the mind, the greater is the *waste* of nervous matter, which is evinced by the presence of an increased amount of phosphates in the urine, and by the demand for fatty matter, which is employed in the renovation of the tissue."* The appropriate treatment in these cases is judiciously pointed out by Dr. Marshall Hall in article 10.

Dr. Chambers's method of treating acute rheumatism, published by the late Dr. Hope, is now pretty well known, and we need therefore only refer the reader to the article in the present volume (art. 12), which gives a summary of it. After a full

* Dr. Carpenter remarks on this subject—"The peculiar ingredient of the nervous tissue, is a *fully acid*, containing a very small proportion of azote, but united with a considerable amount of phosphorus. The amount of change which takes place in this or any other tissue, may be estimated in two ways;—first by the appearance in the excretions, of its peculiar ingredients, set free by decomposition;—and second, by the demand set up for the materials of its re-formation. Now, it is well known, that, when the nervous system has been in unusual activity, there is a marked increase in the phosphatic deposits in the urine; and, as the quantity of phosphorus in any other of the soft tissues is very inconsiderable, it is scarcely possible to attribute this liberation of phosphorus from the system to any other cause than the *waste* of nervous matter,—that is, its decomposition, resulting from the discharge of its vital function. Again, the close chemical relation between nervous and adipose matter, corresponds exactly with the old observation, that persons of "nervous temperament" are seldom or never fat; whilst those of inert bodily and mental habits are much more subject to this deposit. Since nervous matter is chiefly formed out of the same elements as those which would otherwise be employed for adipose tissue, it appears probable that the demand for these occasioned by the continual use of the nervous system, prevents the deposit of fat; whilst it inactively allows their accumulation in another form."—*Dublin Journal of Medical Science*, Nov. 1842. p. 296.

venesection, or even two, in the robust, but without any in the feeble and delicate, eight or ten grains of calomel, with a grain and a half of opium, according to the age of the patient and the severity of the case, are administered every night, and followed every morning by a strong black dose, sufficient to ensure four or five stools, at least; with this is combined, thrice a day, a saline draught, containing from 15 to 20 minims of vinum colchici, and 5 grains of Dover's powder. The calomel is omitted if the pain subsides, or the gums become tender. The opium, however, is continued in grain or grain and half doses at bedtime, and even at noon if necessary, together with the colchicum and black draught, as at first. The patient will generally be cured in a week. (12.)

The young practitioner is frequently at a loss to account for cases of bleeding from the urethra, and he may not be able at once to remember the opinions of standard authors on the subject. He may not know where the blood comes from, whether from the bladder, the urethra, the ureters, the prostate, or the kidneys; and his ignorance on this point will necessarily involve indecision in his treatment. One of the simplest means of knowing whether or not it be real blood which tinges the urine is to gradually boil the liquid. If it contain blood, a greyish brown flocculent precipitate, consisting of coagulated albumen tinged with the colouring matter of the blood will form and gradually subside, leaving the supernatant liquid clear and of its natural tint. Dr. Prout states that "when blood is derived from the kidney, it is in general equally diffused throughout the whole urine: on the contrary, when derived from the bladder, the blood for the most part comes away in greater or less quantity at the termination of the discharge, the urine having previously flowed off nearly pure." When the blood proceeds from the urethra, it will generally come away *guttatim*, or in a stream unmixed with urine, and neither preceded nor accompanied by any desire to make water. But there are many cases where it is almost impossible from the absence of pain, &c., to fix upon the part whence the blood arises, and in these doubtful cases it will probably be found that the kidneys are the organs giving rise to it, from the existence of earthy concretions, which we know may form in the kidneys in great numbers, and to a considerable size, without furnishing any signal, except that of hæmaturia, which may lead us to suspect

any mischief. The *treatment* of hæmaturia must be exceedingly various. When the bladder is so distended that complete retention of urine takes place, recourse must be had to a large eye catheter and an exhausting syringe, by the aid of which, and the occasional injection of cold water, the coagula may be broken down and removed. If the hæmorrhage returns, injecting cold water into the rectum or bladder, and, if necessary, from twenty to forty grains of alum in each pint of water may be used. Dr. Prout says this seldom fails, even when the cause is malignant disease. Among internal remedies, *Ruspini's styptic*, recommended by Sir Benjamin Brodie in his published lectures, is no doubt a valuable medicine. Dr. A. T. Thompson says this consists of a solution of *gallic acid* in alcohol diluted with rose water. The French are very fond of the extract of *rhatany* root, the *krameria* of our Pharmacopœia. Dr. Watson gave this to a female in scruple doses three times a day, and the hæmaturia ceased after the first dose, although the affection had resisted treatment for some weeks. *Gallic acid* enters into the composition of this vegetable extract, and it is worthy of notice, that gallic acid is one of those substances, which, when introduced through the digestive organs into the blood, passes through the round of the circulation unchanged, and reappears in the urine: it is therefore proved to be a most useful astringent in more cases of hæmorrhage than those which arise from the urinary organs. The styptic virtues of the *uva ursi*, *bistort*, *tormentil*, *pomegranate*, *kino*, *catechu*, and the several preparations of gall-nuts may likewise depend on the same principle, or rather, probably, on the *tannin*, as this exists in much greater proportions than gallic acid in most of these substances, although the medicinal effects are alike. In one hundred parts of *rhatany* root, Gmelin found thirty-eight parts of tannin, and Peschier forty-two parts. Hence we find its value not only in internal hæmorrhage, but also in profuse mucous discharges, passive hæmorrhages, as metrorrhagia, and in relaxation and debility of the solids. But in those mucous discharges which proceed from chronic affections of the urinary organs, we shall find that *uva ursi* and *pareira brava* are the two most valuable of our medicines. When combined with *hyosciamus* and persevered in for a *considerable time*, Dr. Prout says the *uva ursi* is of the greatest use: on the other hand, Sir Benjamin Brodie places much more confidence in *pareira*

brava, which he uses with the greatest benefit in cases of "*discharges from the urino-genital mucous membranes* ; in chronic inflammation of the bladder especially, Sir B. Brodie thinks it has the greatest influence, "lessening very materially the secretion of the ropy mucous, and diminishing the inflammation and irritability of the bladder also." He gives it in the form of a concentrated decoction with tinct. hyosciam., and where there is a deposit of the triple phosphates, he accompanies it with muriatic or diluted nitric acid. His formula is, half an ounce of the root in three pints of water, boiled down by gentle simmering to one pint: of this eight or twelve ounces may be taken daily. (13.)

While on this subject we will refer to the papers of Dr. Walker, of Huddersfield, and Mr. Soden, of Bath, who have found such an excellent effect in some affections of the bladder from a combination of benzoic acid and copaiba, which succeeded in some cases where the *uva ursi* and *pareira brava* had failed. Our readers will remember the interesting article at page 33 of Retrospect IV., by Dr. Ure, on *hippuric acid*, which is formed in the system by the exhibition of benzoic acid. When benzoic acid or a soluble benzoic salt is taken, it changes the uric acid of the urine into this hippuric acid ; and it has been discovered that the hippurates of soda, ammonia and potash are much more soluble than the salts which uric acid forms ; hence in some states of the urine the formation of hippuric acid as a substitute for the uric acid is of the greatest consequence, and considerably facilitates the cure. When the benzoic acid is combined with copaiba, it has been found both by Dr. Walker and Mr. Soden to be superior to the *uva ursi* and *pareira brava* in many cases of great irritability of the bladder accompanied with muco-purulent discharge. A drachm of benzoic acid, with half an ounce of balsam of copaiba, made into an eight ounce mixturæ with the yolk of an egg, will be found an excellent remedy. Two table-spoonfuls may be given three times a day. (57.)

Dr. O'Beirne, of Dublin, has advanced some very ingenious speculations supported by very excellent cases in order to show that the different forms of dropsy depend upon *venous obstruction*, and that the great remedy to be depended upon, even in the most extreme cases where the powers of the system are almost exhausted, is blood-letting, and supporting the patient

at the same moment with stimuli such as gin and water. Blood-letting, indeed, is one of the oldest remedies which have been tried from Hippocrates downwards, but so conditionally as frequently to destroy its efficacy. At the same time we are not prepared to go the lengths of Dr. O'Beirne in his very clever speculations, nor to coincide with him as to the universal or general adoption of blood-letting in this often most mysterious and troublesome malady. This treatment is no doubt the most direct and certain way of unburdening the loaded veins, and relieving the venous obstructions which very frequently produce liquid effusion, but it certainly is not adapted to all forms of dropsy. "It will always, indeed," as Dr. Watson says, "remove a portion of the aqueous ingredient of the blood, but it expends at the same time its fibrin, and its red particles; it impoverishes the circulating fluid, and so enfeebles the patient. Perhaps by rendering the blood more watery, venesection may indirectly favour the transudation of the serum outwards whenever the venous current happens to be retarded, but it certainly weakens the central organ of the circulation; and to muscular debility of the heart we have seen that certain forms of general dropsy may owe their origin—and thus it is that ill timed or excessive bleeding may be the cause of dropsy. In these forms of anasarca, instead of robbing the veins of their blood, we seek to repair the quality and richness of that fluid, and so to restore the deficient vigour and tone of the whole muscular system, and of the heart in particular." Dr. O'Beirne, however, endeavours to answer the different arguments against his peculiar views, and he certainly does so very ingeniously. He shews in the first place, that the exhalants are intimately connected with the venous and not with the arterial system; thus, when arteries are tied they rarely pour out any of their contents, but relieve themselves by the enlargement and anastomosis of their small lateral branches; and when not tied, but much distended, their minute branches pour out either blood or coagulable lymph, *not serum*; while veins being very distensible, rarely relieve themselves by their small lateral branches but by extension of their coats, and if that prove insufficient by the effusion of *serum, not of blood*. And as he supposes that venous obstruction is the cause of dropsy, he endeavours to prove that all those diseases which cause this affection are sufficient to cause, and really do produce this venous obstruction—for example,

that as the causes of *hydrothorax* are chiefly diseases of the lungs, heart, liver, spleen, &c., all these affections cause obstruction in some of the great venous trunks, and consequent distension of their parietes and exhalation of serum into the serous cavities, which serum is not effused so much at the point of obstruction as at an infinity of points the most distant from it; that is from the numberless exhalants connected with the minute radicles of the obstructed vein.

In connection with this subject he offers a very ingenious theory respecting the uses of the spleen, which is much the same as the one entertained by Professor Hargrave, and published in the Dublin Med. Press, for August 10, 1842.

He arrives at the conclusion that this viscus in the healthy state is contracted and at rest, that it contains no more blood than is poured into its cells, after becoming venous, by its nutritious arteries; and that it performs no function but that of a *reservoir* for the relief of overloaded states of the vena cava inferior and the whole portal system. This is easily seen to be probable when we remember that the *venæ cavæ hepaticæ* enter the vena cava inferior just as it is passing through the tendinous opening in the diaphragm, that their mouths are large and always wide open, having no valves and consequently admitting of reflux, and that the powers which propel the blood of the portal system are very feeble compared with those which propel that in the inferior cava, all which circumstances seem to shew that the *venæ cavæ hepaticæ* as well as the rest of the portal system, instead of offering resistance, are constructed not only to facilitate but to provide for determination towards them: the blood of course would easily find its way along the splenic vein into the spleen, and this organ would thus act as an immense and most important reservoir to relieve venous obstructions almost throughout the whole system, either immediately or collaterally.

With the views of Dr. O'Beirne as to the nature of dropsy, it follows that the *treatment* will consist in relieving the venous obstruction, and as this cannot easily be done by removing the pressure we must relieve the distended veins by blood-letting; but we cannot agree with him that "we have only to remove the venous obstruction in order to remove the disease;" as the diseases attending *hydrothorax* and other kinds of dropsy are often incurable: at the same time we consider that his reasoning and his

facts are very striking, and ought to be seriously thought of by the profession. He justly observes that the immediate effects of the first bleeding are to relieve the absorbent system, and enable it to restore the effused serum to the circulating mass of blood, a proof of which we see in the sometimes rapid reduction in the swelling and œdema of the external parts: but we ought to remember that the system is not re-invigorated by the absorption of serum in proportion to the previous debilitating effects which result from the loss of its fibrin and red globules—the blood-letting ought, therefore, to be proceeded with cautiously, and if necessary gin and water may be given at the same time. The bleeding may be repeated, when absorption and the secretion of urine become languid; but it will rarely be required to do so more than three or four times during the treatment, the interval between each bleeding being about two, three, or four days, so as not to induce debility; and for the same reason, the quantity of blood taken should be reduced in succession, from eight or ten to six, and from six to four ounces, the last being the smallest that can be of any decided benefit. The gin and water should be used in the proportions of one part of the former to four or five of the latter, and the gin should be Dutch, not English; the gin is selected on account of its well known diuretic properties. If a case (of hydrothorax, for example,) should occur in which the patient is evidently dying from difficulty of breathing, yet not comatose or paralysed, the fluid should be partially evacuated, so as to relieve the symptoms, and wine and water, and every restorative means employed, and when absorption has gone on for a few hours, it is probable we might find a vein from which we might bleed, in the horizontal position. The venous obstruction would thus be relieved, and we might at the same time support the patient by animal food and the occasional use of gin and water. When this kind of case follows an attack of inflammation of the lungs, the animal food and spirit should be withheld for a few days, or longer, if necessary. (14.)

From the investigations of Dr. Clay, of Manchester, we are led to think that inspissated ox-gall will prove a very useful addition to our list of remedies in cases of dyspepsia, and for most derangements of the alimentary canal, where “*deficiency in quality or quantity of bilious secretion is the prominent and prevailing accompaniment.*” The recent gall of the ox is to be

slowly evaporated to the consistence of an extract, and if sufficiently firm, it may be made into three or four grain pills, two of which may be given three times a day; and if not firm enough, sufficient magnesia may be added for the purpose. Ox-gall is by no means a new remedy; but Dr. Clay has certainly thrown a good deal of light on its remedial powers. In *dyspepsia* we think it worthy of extensive trial. Where there exists acidity after taking food, violent headache, pain in the epigastric region, obstinate constipation, and where purgative medicines produce great irritation and uneasiness, a few doses of the ox-gall pills will probably produce a gentle and copious evacuation, with considerable relief to the other symptoms. In obstinate and habitual constipation, two four-grain pills may be given three times a day with great benefit, and continued for a longer or shorter time according to circumstances. Dr. Clay thinks that the action of the medicine is not as a cathartic, "but as a direct solvent to the accumulated hardened fecal mass, the consequence of deficiency of quality or quantity of bile in the alimentary canal." It is also found to counteract in a great measure the constipating effects of opium, which drug not only checks the secretion of bile, but almost all the other secretions of the body. In many of the affections of the alimentary canal in children, especially in marasmus, it may prove a valuable remedy; also in acidity of the stomach, curdled vomitings, green motions, and abdominal pains. From the experiments of Baglivi, Lewis, &c., "it prevents milk from turning sour, and dissolves it when in a state of coagulation;" and may, in this way, prove serviceable to children. (16.)

From the extensive use of *cod-liver oil* on the continent, and especially from the observations of Drs. Ascherson and Kleucke, we must now regard it as an *anti-strumous* agent of some value. It is not thought that the therapeutical action of the oil depends upon the iodine it contains, but upon its oleaginous nature, and its general character as an animal oil. It is said to replenish the blood with an energetic and rich plasma. *Skate-liver oil* is said to be equally efficacious and less disagreeable: and Dr. Ure has suggested *cod-livers* as a diet for those patients who are recommended to take the oil. The livers are to be cooked in the way he directs, so as to coagulate the albumen of the liver, and thus prevent the escape of the oil. (17.)

The remedial powers of *creasote* have certainly been over-

rated by many writers: it has been given too indiscriminately. Dr. Cormack thinks that "it resembles prussic acid in its sudden depressing action on the heart, as well as in the temporary nature of its toxicological operation;" and that in medicinal doses it is sedative and calming, but evanescent in its effects, and requires therefore to be given in *often-repeated small doses*. It seems to be somewhat similar in some of its effects to nitrate of silver, being an irritant and caustic in large doses; and combining readily with albumen like that substance. May not its sedative and beneficial effects in chronic irritability of the stomach, and in the vomiting of hysteria be attributed to this circumstance? Its efficacy in arresting hæmorrhage from small vessels is often remarkable, and depends on this union with albumen, thus forming a crust. (18.)

The use of the potatoe in sea-scurvy has been known for many years—since the publication of Sir G. Blane's work on the Diseases of Seamen, in 1780—but we believe its use has been very limited, not so much, probably, on account of its inefficiency, as from the existence of more agreeable anti-scorbutics. In fact, the dietetic remedies and preventives for scurvy are now so numerous, that out of all our vegetables, we may ask which is not anti-scorbutic? We find this virtue not only in lemons and oranges—which are our best preventives—but also in most sour fruits, as grapes and apples; in plants comprised in the order *cruciferae*, in which most of our common vegetables are included—as the cabbage, turnip, radish, water-cress, &c. And we should think that the plan pursued by Sir Edward Parry, both a very amusing and efficacious method of obtaining fresh vegetables for a small number of men. He was accustomed to raise a quantity of mustard and cress in his cabin, in small shallow boxes filled with mould, and placed along the stove pipe, so that in the severity of winter at the Pole, he could ensure a crop at the end of every six or seven days; and by keeping several boxes at work, he could give two or three scorbutic patients nearly an ounce of fresh salad daily. It ought, however, to be more generally known in the navy, that the common potatoe, whether boiled or raw, but especially when raw, and sliced like cucumber, and mixed with a little vinegar, is a most valuable anti-scorbutic. (21.)

A good deal has lately been written on the effects of acetate of lead on the system. It is only within a recent period that

its remedial powers have been properly tested, on account of the fear of its poisonous qualities. In Art. 32, Retrospect No. I., will be found a very interesting paper by Dr. Henderson, of Edinburgh, showing the good effects of acetate of lead in bronchitis, in restraining the abundant secretion by which the bronchial tubes are loaded and the respiration greatly embarrassed, and especially when these symptoms occur in children. The administration of this medicine is to be limited to that period of bronchitis in which the secretion is copious; and the quantity of the secretion need be the only guide as to the time of giving it. He gives it, in children, in doses of a quarter, half, or a whole grain, from eight to ten times a day, when the secretion is copious: and in one child, six years old, he gave as much as four scruples in ten days. In an adult, he would give about ten or twelve grains daily, in doses of from one to three grains, with a few grains of the compound ipecacuan powder, and sometimes with a little squill. In a paper by Dr. Barton, Physician to St. Thomas's Hospital, the effects of this medicine are carefully described. (See Art. 89, Retrospect No. II.) One patient took 208 grains in twenty-six days; another 166 grains in twenty-nine days; and a third 295 grains in thirty-three days, without any particularly bad effects. In another interesting paper on the same subject, (see Art. 30, Retrospect, No. IV.) Mr. Sweeting agrees with other authors, that the medicine has hitherto been given in inefficient doses, and with objectionable combinations. He gives five grains every two, three, or four hours, according to the circumstances. He rubs up the dose with a few drops of concentrated pyroligneous acid, in order to ensure a complete solution of any carburet of lead, adds a little distilled water, and filters the whole through paper. The effect of this medicine in his hands, in a case of uterine hæmorrhage, shows its value. He gave her five grains of the diacetate every hour, for twelve hours, and then every four hours for the next twenty-four. In our present volume, Dr. Lane is said to have given the medicine in ten grain doses every four hours, in a severe case of menorrhagia, which had continued some time, and resisted all other remedies. It was cured on the seventh day. Dr. Lane moreover says, though we should be afraid of following his advice, that a *drachm*, or even two, of this medicine, might be given with perfect safety in *desperate* cases. Its power in arresting hæmor-

rhage is certainly very great; probably from its supposed influence in producing a contracted state of the coats of the arteries; and this effect is likewise, no doubt, extended to the secreting and exhaling vessels, the discharges from the mucous membranes, the exhalation from the skin, and the urine being diminished in quantity. If *colic* arise from the use of this medicine, *alum* will be found very successful. Given in full doses, as from a scruple to two drachms, every three or four hours, it will often allay vomiting, mitigate pain, and open the bowels better than any other medicine. (39.)

M. Payan states that we may find ergot of rye very useful in paraplegia. When we consider its effects, not on the uterus only, but also on the rectum, bladder, and lower extremities, and, indeed, occasionally on the whole system, causing the patient to feel universally *benumbed*, as she frequently expresses herself, followed by powerful excitement; we must suppose that it acts primarily and especially on the spinal cord: and we may consequently believe that in some cases of paraplegia it will be found useful. (40.)

In the *crowing respiration* of infants, sometimes called "*thymic asthma*," or "*laryngismus stridulus*," Dr. Marshall Hall recommends the *daily* lancing of the gums, whether inflamed or not. Dr. Henderson recommends an opium liniment with croton oil to be rubbed on the spine. In many of these attacks, as well as in many other convulsive diseases of children, we think the *Indian hemp* might be made available, especially if the preparation could be depended upon. Its anti-convulsive powers are certainly very great, and have never yet been thoroughly tested in this country. In a case related by Mr. Ley, (see page 34,) "Whenever the child awoke from sleep it was seized with a spasm which drew back the head, flushing of the face, stopping the breath until it was drawn in with the peculiar crowing respiration." He gave it the sixth of a grain of the extract, which was followed by tranquil sleep, and mitigation, though not a cure, of the symptoms. (45.)

We cannot pretend, in this recapitulation, to enter into all the improvements and suggestions which have been recently made in the treatment of stricture of the urethra. It is a subject which has lately employed the pen of the most practical man in our profession, Sir Benjamin Brodie; and his remarks are so pithy, practical, and so much to the point in every line

and page which he writes, that we can only refer our readers to the 45th article in the present volume, taken from Dr. Johnson's Review, for one of the clearest and shortest accounts of this important subject, which we possess.

The treatment of the hæmorrhagic diathesis has lately engaged the attention of many practitioners; especially since several cases of hæmorrhage have been recorded, in which all the means that could be thought of at the time have been tried in vain. Mr. Miller has written a good paper on this subject. He supposes that this diathesis is connected both with the blood and blood-vessels, and that a deficiency of fibrin is one very probable cause of it; this deficiency of fibrin, as well as of the blood corpuscles, increasing as the bleeding continues. But it is a curious fact, that in a case of hæmorrhage, the globules of the blood are removed *at first* in a greater proportion than the fibrin: and consequently, at an *early* period, loss of blood favours coagulation by increasing the proportion of fibrin to globules, but ultimately both these constituents becoming diminished, and the serum preponderating, coagulation is more and more difficult. But not only does a small quantity of fibrin in the blood diminish its power of coagulation, but it also occasions congestion of the capillaries, as a certain degree of viscosity has been found by Pousseuille, to favour the passage of fluid through capillary tubes, and thus, if viscosity of the blood be diminished, stagnation of the current, and extravasation of a portion of the contents of the vessels will be the result. But the blood-vessels are also in fault; they have been found "reduced to half their usual thickness; but this seems more probably the result of passive dilatation by loss of contractility, than of original deficiency of the fibrous coat;" and to this want of contractility the hæmorrhagic diathesis may no doubt be in a great measure attributed. The great object of treatment is to increase the quantity of fibrin in the system. This may be done in scrofula—in which disease fibrin is also absent, and is substituted by albumen—by a nutritious diet; but in the hæmorrhagic diathesis we have not the necessary time. It has been discovered that fibrin invariably increases in quantity very rapidly during local inflammation; and Mr. Miller therefore suggests, that by rapidly causing a superficial inflammation at a point distant from the bleeding part, we shall accomplish our purpose; acetate of lead with opium may also be given in

large doses. Dr. Christison says, the Pil. Plumb. Opiat., Ph. Ed., is the best astringent he knows. Each pill contains three grains of the acetate of lead, and half a grain of opium; two to six may be given daily; and as we have already noticed, this dose may be considerably increased if the urgency of the case requires it. To diminish the quantity of *serum* in the blood, if the state of the patient will admit of it, is another indication of treatment; and this will be best accomplished by *sulphate of soda*, given in such doses as to purge freely. This salt has been found not only to diminish the quantity of serum, and thereby produce a better relative proportion between the constituents of the blood, but also to preserve the blood globules in their normal state. *Pressure* is another important step to be adopted; and in the case of bleeding after extraction of a tooth, plaster of Paris has been recommended for the purpose. *Styptics* of various kinds—*transfusion*, and a variety of other means of treatment have also been tried. (46.)

The topical application of different preparations of iodine is not resorted to so often as it ought to be. In many cases, no doubt, this mode of treatment is abused, for the sake of finding out something new, or for the mere sake of novelty. The tincture, however, will be found very useful as an external application in many cases—made with iodine $\mathfrak{z}i$. to alcohol $\mathfrak{z}j$.—some have strongly recommended it for erysipelas, but it certainly does not possess the specific powers which many have attributed to it;—although it may be of great advantage in allaying the burning heat of erythema, and hastening the superficial desquamation which commonly takes place. The tincture, however, is of signal efficacy in ulcers of the tonsils and fauces, specific or non-specific. It is best used in the form of gargle, with $\mathfrak{z}i$ or $\mathfrak{z}ij$ of the tincture combined with $\mathfrak{z}i$ of laudanum to six ounces of water. This is the form used by Ricord. It is also very useful in many of those troublesome affections of the head in children, as porrigo, or more generally speaking—ringworm of the scalp, comprising all those affections described as tinca, porrigo, eczema, impetigo, &c. Dr. Graves recommends in these cases, that the concremented scabs should be removed by diligent ablution, without using any violence; that the morbid secreting surface, or vegetable fungi, should next be destroyed by tincture of iodine, or by a solution of lunar caustic or blue stone, ten, fifteen or twenty grains to the ounce. These

applicatons should be well rubbed into each spot with a piece of sponge, at the end of a quill or stick. This should not be repeated oftener than once a week, and the scalp should be covered with a spermaceti ointment after each application, and repeated four times a day, taking care not to wash the head for three days after applying the caustic or tincture of iodine, but then it may be well but gently washed with yellow soap and water, twice a day, taking care to cover as before with a spermaceti dressing after each washing. Another disease in which the tincture is very useful, is that of effusion of fluid in joints. After the acute symptoms have subsided, the part is to be well brushed over with the tincture every day; its application should be preceded by friction with a flannel cloth. We need not refer to the external application of the iodide of potassium, as this favourite form of iodine is too well known to need any comment. The iodide of sulphur is also now pretty well known, especially since the publications of Dr. W. J. Erasmus Wilson and Dr. Davidson. In *porrigo* it is strongly recommended by the former, in the proportion of 3 ss to *Ol. Olivar* ℥i; the latter uses ℥i to ℥ij, in ℥i of lard, applied generally once and sometimes twice a day; but it will probably be found inferior to Dr. Graves's treatment with the tincture. It is also highly recommended in *lepra* and *psoriasis*; and in a case of *sycosis menti*, Dr. Ross used it in the form of an ointment, gr. xv. to the ounce, night and morning. The iodide of mercury, ℥i, to ℥ iss of lard, as an application to various syphilitic ulcers, is too well known to require notice here.—But not so with regard to the *iodide of zinc*, which Dr. Cogswill says is one of the best applications to chronic enlargements of the tonsillary glands. A solution of ten, fifteen, or thirty grains to the ounce of water, may be applied to the tonsils daily, by a piece of sponge tied to a quill. After using this substance, Dr. Ross uses the substance itself, undiluted; a little of it is exposed to the air till it deliquesces, and then applied in this state to the tonsils by means of a camel's hair brush. Dr. Ross says, "In two patients in which these glands were so much enlarged as almost to fill up the isthmus of the fauces, and interfere materially with deglutition, they were quickly reduced to nearly their natural size." (48.)

Mr. Smee has advanced a theory respecting the action of tartrized antimony in the cure of syphilis, which if found to be

correct by subsequent experience, will be a valuable addition to our remedial measures. We should hesitate, however, in putting on one side remedies which have been available for so long a period, without ample proof of the superiority of some new mode of treatment. Mr. Smee says, that by giving very small doses of this drug, frequently repeated, we charge the system with it; thus irritating the capillary system, and inciting it to action throughout the whole body, causing it to throw off the antimony and with it the syphilitic poison. The practitioner should first give an aperient, and then from twenty to sixty drops of antimonial wine every two or three hours, regularly; and in every case where pus or a puriform discharge exists, use at the same time a lotion of chloride of soda, about an ounce of the solution to a pint of water. Mr. Smee's paper is altogether a very interesting one, and deserves consideration, especially since the simplicity and harmlessness of such a practice is a great desideratum. (49.)

One of the most tiresome and unsatisfactory cases in surgery is to remedy the deformity caused by cicatrisation after burns. All the ingenuity of the surgeon seems to have been long since exhausted in endeavouring to remedy this disfigurement. The practice of cutting out a certain portion of the cicatrix, and supplying its place with sound skin from its immediate neighbourhood is not, however, sufficiently known and practised. This operation of *autoplasty* may be brought into service in all cicatrices of the neck, cheek, eyelids, nose, lips, and all other visible parts. (51.)

Another interesting operation is related in the American Journal, viz. that of considerably improving complete ankylosis by operation. This kind of operation was performed by Dr. Barton in 1827, in a case of ankylosis of the hip-joint, and recently by Dr. Gibson, of Philadelphia, in a man whose leg was bent backwards upon the thigh so as to be completely useless, the knee joint being quite destroyed. The last operation consisted in cutting down upon the thigh bone a little above the knee, and removing a portion of it of a wedge shape with the saw—the base of the wedge shaped portion being anterior and the apex posterior, so that when the leg was brought gradually downwards and forwards the edges of the two extremities of the femur would be in a tolerable state of juxta position, which approximation, however, was not accomplished all at once, but

very gradually and apparently without much force or extension being at any time employed. (52.)

Mr. Wormald, of St. Bartholomew's Hospital, has long been in the habit of treating various cases of ophthalmia by applying the nitrate of silver to the *outside* of the eyelids, instead of to the internal surface of that membrane. Dr. Hocken explains the mode in which this remedy acts in strumous ophthalmia: The solid nitrate is to be rubbed over the upper and lower eyelids with the view of blackening the surface and thereby acting on the fifth nerve, which is the chief cause of the intolerance of light and irritability of the eye. Mr. Higginbottom, we believe, anticipated both the above mentioned gentlemen in this particular way of applying this valuable remedy to the skin of the eyelids. (53.)

We beg particularly to call the attention of the profession to the articles in the preceding pages on laryngotomy. This is an operation which is certainly neglected in many cases where life might be saved by its means. We think that every surgeon ought to carry in his pocket case some sort of instrument by which he might be ready on any emergency to perform this simple operation. Even in the few cases of laryngitis or croup in which it is performed, it is too frequently delayed till too late; for when asphyxia approaches it will have little chance of success. In all cases, therefore, in which blood-letting, antimony, mercury, &c., have failed to relieve the disease, and where the strength is evidently giving way rapidly, the difficulty of breathing increasing, and lividity showing the approach of asphyxia, bronchotomy ought to be performed without delay. We quite agree with Louis, that "as long as bronchotomy is considered an extreme measure, it will be always performed too late:" and Dr. C. J. B. Williams judiciously remarks, that if in laryngitis "free bleeding produce no relief, or be not borne, and serious difficulty of breathing have become established, we would not wait for the appearance of pallor or lividity, as recommended by Dr. Cheyne, but we would urge the performance of bronchotomy without delay. To defer the operation on account of the difficulty or danger attending it, is most unreasonable; for experience has proved that these are increased rather than diminished from delay; and the danger from the operation is at no period to be compared with the danger from the obstruction to the breathing that it is calculated to remove.

Laryngitis destroys life—not by the extent on the vitality of the organ which it occupies, but by closing, as it were, the door of the breathing apparatus; by opening another door, we render the disease comparatively trivial; and it may then be deliberately attacked by mercurial and other remedies, or, if slighter, even be allowed to run its course, which commonly ends in muco-purulent secretion.” The same remarks will apply equally well to all cases in which respiration is impeded. For this operation the two instruments referred to in Articles 54 and 56, will be found very convenient, and either of them might be carried in a pocket-case of instruments to be ready on any emergency. Mr. Hilton’s instrument seems to us the simplest and best adapted for the operation, although Mr. Millikin’s is ingenious, and approved of by some of the first men in Dublin. Mr. Hilton’s consists of “a curved trochar and canula; the canula being oval from side to side; and the trochar lancet shaped, much flattened above and below, and cutting at its point and edges. This instrument may be passed through the crico-thyroid membrane into the larynx, or through the trachea, with the greatest facility.” It is better to divide the skin first with a lancet, and “the forms of the cutting instrument and canula are so adapted that the canula presses upon the whole of the cut surface, and thus prevents any internal bleeding.” Mr. Millikin’s instrument is minutely described in Article 56. (54.) By means of Mr. Hilton’s curved canula which may be allowed to remain in the trachea, the dilating canula of Mr. Dunne, although a very ingenious instrument in some cases, will not be required. (55.)

In the operation for cataract, Mr. Egerton, of Calcutta, and Mr. Morgan, of Guy’s Hospital, have recommended a modification, which, although coming from such respectable authority, we should hesitate in adopting. Instead of simply depressing the lens, Mr. Morgan recommends that the needle be gradually *drilled* or insinuated into the substance of that body before its depression, in order to disturb as little as possible the vitreous humour, which when thus kept from injury, assists very materially in keeping down the opaque lens. Other advantages are stated to result from this mode of operating, which we ourselves cannot perceive. (58.)

Numerous other practical suggestions will be found in the shorter articles in the different pages of this volume, which it

will not be necessary for us to recapitulate, as they are already as much condensed as is compatible with a clear exposition. It will hardly be necessary for us to refer to the splendid discoveries of Liebig, as they are already pretty well known to the profession. We have given one of his articles on Animal Heat, which it will not be possible to abridge. (92.)

Professor Hargrave's theory respecting the uses of the spleen and vena portæ seems exceedingly plausible. We have already noticed the views of Dr. O'Beirne, which are very similar: indeed it seems highly probable, such is the similarity of opinion between these two gentlemen, that the one must have received his views, in some way, from the other. The want of valves in the whole portal system, and in the splenic vein as well as in the venæ cavæ hepaticæ, as they enter the inferior cava, evidently show the intention of nature to allow of easy regurgitation or reflux of blood from the parts above towards the spleen. The spleen, indeed, has for ages been supposed to be a reservoir for blood, but never, to our knowledge, so satisfactorily explained as by Professor Hargrave. When we understand the anatomy and physiology of this part of the frame, we can see how beautifully nature counteracts venous obstructions and congestions in the most vital and important parts of the body. If the heart has not power to send the blood with sufficient force along the pulmonary artery, or if regurgitation take place from valvular disease, or if the lungs be so diseased or impervious, from any cause, that the blood cannot permeate their tissue with ease and rapidity, what will be the consequence? There must inevitably result a gorged state of the two cavæ, which evil would be rapidly communicated to the brain and the whole of the system, had not nature contrived this side canal to relieve these important parts from such dangerous consequences. As the absorbing powers of the veins are now fully admitted, we can see more clearly how it is that liquids become so rapidly taken up from the stomach into the circulation; they pass through the vasa brevia veins into the splenic vein, then through the vena portæ and venæ hepaticæ into the heart. This arrangement of vessels enables us also to explain more satisfactorily why the liver becomes so frequently diseased in individuals who take spirituous liquors, which are transmitted through the liver almost in an undiluted state. (93.)

BIBLIOGRAPHICAL NOTICES.

Clinical Researches on Auscultation of the Respiratory Organs, and on the First Stage of Pulmonary Phthisis. By JULES FOURNET. Paris: 1839. Translated by T. BRADY, M.B. Part I.—1841.

This is the first part of a translation of the work of M. Fournet, which has now been before the public for two years. The original is well worthy of being introduced to the British medical public, and Dr. Brady has ably executed the task which he has undertaken.

No one, from the style of the English work, would at all suppose that he was reading a translation from a foreign author. Many translations are much disfigured by retaining the original idiomatic forms of expression; but with the exception of an occasional Irishism, the one before us is purely English throughout.

The work itself is one of great labour, and evidently the result of long-continued and careful enquiry. In this first part, the nature and causes of the auscultatory sounds produced in the organs of respiration, are investigated with great minuteness; and the varieties of the morbid sounds are distinguished and defined with greater precision than has been before attempted.

Some new observations and opinions are propounded; but, like the greater part of our French neighbours, M. Fournet exhibits some degree of ignorance of the progress of discovery in this country; and sometimes seems unwilling even to acknowledge the observations of his own countrymen, where this would rather interfere with his own claims as an original observer.

The work is not so much adapted for the perusal of a beginner, as for one already experimentally acquainted with the practice of auscultation; the former would be alarmed and con-

fused by the minuteness of the details ; and, indeed, we much suspect that, in some cases, more minuteness is attempted than would be of practical utility to the most experienced physician.

An important point frequently brought before the reader, in this work, is the existence of an expiratory murmur in the healthy state of the respiration, and the importance of attending to its modifications in disease. Though this expiratory murmur was overlooked in the commencement of the study of auscultation, it has now been fully acknowledged, though M. Fournet seems to claim to himself considerable merit for drawing attention pointedly to this particular ; and even Dr. Brady, in a note, seems inclined to expect that the promulgation of this doctrine will produce some surprise. M. Fournet justly ascribes the merit of having first directed our regard to the existence, physiologically, of an expiratory murmur, to a young American physician, Dr. Jackson, ten years ago, who was then in Paris ; for though Laennec, in one passage, distinctly asserts its existence, he seems afterwards to have quite overlooked it ; and it was equally neglected by other observers of his time. But, since then, M. Louis, and others, in France, have unequivocally described it : and Dr. Cowan, in this country, in 1835, (as Dr. Brady remarks,) as well as others, have distinctly pointed out, and described it, both as a physiological and a morbid phenomenon.

There is some little confusion in the application of the term "murmur," to some of the respiratory sounds. It would be well to confine it exclusively to the sound of vesicular respiration, that is, the sound which has its origin in the pulmonary vesicles. M. Fournet evidently believes in the existence of a vesicular sound with the expiration, as well as with the inspiration, in the healthy state, as is evident from the following passage at p. 29.

"Expiration, like inspiration, is represented, in its proper character, by a pure and gentle murmur. This murmur is even more continuous, less successive, than that of inspiration. The term *vesicular*, in any other sense, *than as indicating the seat of the sound*, is still less applicable here than in inspiration."

The paragraph occurs under the head of expiration, in the section vesicular respiration. The word, in the original, is *bruit*, which is rendered into the customary word *murmur*, in

the translation. It would seem, indeed, that M. Fournet regards the expiratory murmur in the lungs, as exclusively vesicular in its origin; for, under the section of bronchial and tracheal respiration, no distinct mention is made of the expiratory sound, and he states, under this latter head, (p. 31,) that "The part of the posterior region of the chest, corresponding to the root of the lungs, is the only place, in general, in which normal bronchial respiration can be heard; and, furthermore, this point is much more circumscribed than is usually supposed;" an opinion, from which our own experience would lead us to differ. With regard to the principal question, however, as to the vesicular origin, or otherwise, of the expiratory murmur, we would remark that Dr. Williams expresses an opinion contrary to that of M. Fournet. He states that—"In natural inspiration, there are three kinds of sounds produced, tracheal, bronchial, and vesicular; in expiration, there are, at most, only two, tracheal and bronchial." We do not profess to decide between these opinions. We are not aware that M. Fournet states his reasons for his own view; he acknowledges, in the passage we have quoted above, that the character of the sound did not lead him to this conclusion. Dr. Williams' opinion seems to be derived from considering the mechanism of the respiratory function; probably, also, from the nature of the sound.

M. Fournet has all the merit of originality in his plan of representing numerically the force of the natural or morbid respiratory sounds which auscultation discloses. The duration and intensity of the inspiratory murmur, when healthy, points to 10 in his scale; that of expiration to 2; and each of these, when morbid, may rise above their natural standard as high as 20, or sink down to zero. Considered as a ready means of expressing, in written, or oral description, whether a given sound has an intensity above or below the natural standard, this plan may prove useful; but we conceive that greater accuracy is attempted and professed, than is really obtained, when an individual number, out of an extensive scale, is assigned to each sound, and to every variety of sound, as representing its true value. Of different observers, though all might agree that a certain morbid sound is louder than the healthy one, or the reverse; yet, if they were required to express, in numbers, the amount of variation, probably each would refer to a different point in the scale as its proper place. It appears to us, that

it must be as difficult to ascertain the exact degree of any sound, by the ear merely, as it would be to state precisely the degree of heat emitted from any body, by the touch, without the use of the thermometer. It would seem a much more easy thing to express accurately, in numbers, the relative *duration* of sounds, than their *intensity*; Laennec attempted this with regard to the sounds of the heart; but, even here, subsequent writers have questioned the accuracy of the numbers which he employed.

Towards the close of the introduction, M. Fournet gives some very useful rules for the practice of auscultation, well worthy of a careful perusal. M. Fournet, like most French auscultators, prefers the naked ear, in most cases, to the use of the stethoscope, which, though a French invention, yet, in the present day, is very rarely used in Paris. The English still retain it in general use, and we prefer the English practice. To say nothing of the greater cleanliness and decency with which the stethoscope enables the physician to examine the patient, we believe that, in many cases, a more accurate examination may be made, with the assistance of this instrument, than without it. By its use, the confusion arising from the rustling of the clothes, and, especially, the crepitation of one's own hair, is, in a great degree, obviated; and some sounds, particularly those of the voice, are better ascertained and more distinctly limited. In another part of his work, M. Fournet expresses a very low opinion of the diagnostic value of the sign pectoriloquy. To our own ear, this sign is much less easily distinguished from bronchophony without the stethoscope than with it; and, probably, had M. Fournet practised his examinations with the aid of that instrument, his opinion of the distinctive character of pectoriloquy might have been more favourable. Dr. Stokes, however, agrees with our author in assigning little value to pectoriloquy as a sign of phthisis; and Dr. Corrigan holds the same opinion, which, Dr. Brady remarks, may be considered as that of the Dublin school generally.

The importance of being able to ascertain the existence of those incipient lesions in the lungs, which, if unchecked, lead to the fatal disease tubercular consumption, is fully acknowledged by all, as it is only in this early stage that medicine can be hoped to produce a curative effect. The second part of M. Fournet's work is devoted specially to this subject, the

translation of which is not yet published ; but the part before us, as containing descriptions of the characters of the various morbid sounds, both abstractedly, and in connection with the various lesions with which they coexist, necessarily treats upon this subject among others. We have already remarked that our author lays great stress upon the variations in the expiratory murmur, as an important sign in the early stages of phthisis. At this period, the murmur becomes so loud and prolonged as to equal or surpass that of inspiration. M. Fournet says it may rise so high as twenty in his scale, thus becoming ten times more forcible than it is in health ; and, at the same time, the duration and intensity of the inspiratory murmur are reduced so much as to fall to four or even two. These signs are important, but they also exist with emphysema. The sounds of percussion, (which are only incidently referred to in this treatise,) would serve to distinguish these diseases ; but there are other signs directly connected with the function of respiration, and which are, therefore, fully treated. The crackling ronchus, (*bruit de craquement*) is a sign of early phthisis, and exists in no other disease ; at first dry, as the tubercles soften it becomes moist. The modifications of the expiratory murmur precede this sign. The "pulmonary crumpling sound" is another sign which is observed in the last half of the first, and the commencement of the second stage of phthisis. "It has always disappeared when the dry crackling ronchus has passed to the moist state." This sign has not been described by any previous writer. "It conveys to the ear a sensation of squeezing or crumpling." It generally, but not invariably, exists with inspiration only. For a further account of this sign we must refer our readers to the work itself ; we are, as yet, quite unacquainted with it experimentally. The only other physical sign of early phthisis to which we shall refer, is a variety of the pleuritic friction sound, which may be called the grazing sound. This is only an occasional accompaniment of the disease in question. It is the result of partial pleurisies of small extent depending on the formation of tubercles at or near the surface of the lung. It is usually confined to a very small space ; and "is remarkable for the variability and changeability of its situation, which is in the superior, rather than the inferior part of the chest. It is evident that this cannot be a very early sign of phthisis, for the tubercles must have acquired some development before their

irritation would be able to give rise to pleuritic inflammation, however slight; but we have ourselves noticed this sign in some cases where all the other signs were those merely of incipient disease. Other signs of early phthisis, of course, are described, but with the remainder all auscultators are already acquainted; and we have selected those to which something of the interest of novelty belongs.

As any variation of the character of the respiratory murmur, in corresponding parts of the opposite sides of the chest, is an important point in the diagnosis of the early stages of phthisis, it was highly important to ascertain whether, in the perfectly healthy individual, the sounds are precisely similar. M. Fournet has carefully examined this point, and we give his conclusion in his own words.

“I examined a great number of persons in the medical and surgical wards, who presented every appearance of healthy lungs, and found, in almost every case, *that the inspiratory and expiratory murmurs were exactly the same on both sides of the chest*, at the superior as well as at the inferior part, in front as well as behind. The few individuals in whom I found the expiration a little more developed under the right clavicle than the left, were precisely those who were calculated to excite some doubt as to the state of their lungs. To satisfy myself on this point, I afterwards selected, in the military wards, persons who had all the appearance of robust health, and who had been brought to the hospital by diseases very different from those of the thoracic organs; in this way I satisfactorily ascertained that, in a state of health, the respiratory sounds are equally audible on both sides of the chest. It results from this, *that whenever we find a difference between the murmurs at the summits of the lungs, this difference may in general be attributed to a pathological condition.*”—(p. 35.) Dr. Brady, however, remarks in a note on this passage, that, unfortunately, the experience of Dr. Stokes is directly the reverse of that of M. Fournet. Dr. Stokes says, “I have found that, in many individuals, there is a natural difference between the intensity of the murmur in either lung; and, in such cases, with scarcely an exception, the murmur of the *left* is distinctly louder than the right.

We shall only allude to one other of the subjects of interest treated of in the work before us. M. Fournet has well remarked that, in some cases of pneumonia, though all the other

symptoms may be present, the diagnostic physical character of crepitation is sought for in vain. In these cases, the pneumonia occupies some part so deep in the substance of the lung, that the sound of crepitation fails to be conveyed to the ear. Here the existence of an exaggerated, or supplementary respiration, on one side, is an important sign, showing that some portion of the lung is disabled, and thus more work is thrown upon the sound portion; in fact, this sign, with the co-existence of rusty sputa and the other general phenomena, are sufficient to warrant our diagnosing pneumonia, even should a careful examination not discover any crepitation.

Another important point with regard to the subject of pneumonia, is the existence of a stage of "active sanguineous congestion," before either the symptoms or signs truly belonging to inflammation of the lung, present themselves; in which stage, if its existence be discovered, suitable treatment may completely arrest the disease, and prevent the pneumonia. The signs characteristic of this state are as follows:—"A respiration of the humid, viscid character. A marked diminution of both the respiratory murmurs; a diminution nearly proportional in each; inspiration having fallen to 4 or 5, expiration to 1. The ronchus elsewhere described as the humid ronchus with continuous bubbles. Slight, dry cough, not accompanied in any part of the chest, by the usual signs of bronchitis. Feeble bronchophonic resonance, but only in cases where the congestion has attained a high degree." To these are added, slight dulness on percussion, and sometimes, slight diminution of the vocal vibration; these only where the congestion is in a high degree. The true character of the respiratory sounds, here given, will hardly be understood without referring to the detailed description given of them in their proper place in the work. That of the "Humid ronchus with continuous bubbles," occupies nearly three pages, beginning with p. 108; and may be well referred to as an illustration of the extreme minuteness to which M. Fournet gives way in some instances. We suppose it to be the same as Dr. Stokes has observed, and which he describes as a puerile or unusually loud sound of respiration preceding the occurrence of crepitation in pneumonia.

We have selected a few of the points of interest with which this work abounds; our limits will not permit more; but these are sufficient to show that the work is well worthy of the atten-

tive perusal of our countrymen, who, in most cases, excel our continental neighbours in their readiness to become acquainted with the advances made in medicine abroad, and the candour with which they allow merit to the rightful owner. Dr. Brady's share in the work being merely that of a translator, we have had less opportunity of introducing him, than M. Fournet, to our readers. There are, however, some notes by the translator at the end of this first part, well worthy of perusal, and we have principally selected our illustrations of the work from those subjects which are so commented upon. We shall be very glad to see the second part of this work in its English dress by the same hand.

On Diseases of the Bladder and Prostate Gland. By WILLIAM COULSON. 3rd. Edit.

In consequence of the press of matter from the different journals which completely occupies our pages, we shall not have room for a long notice of either this or any other work.

In the work before us, Mr. Coulson clearly establishes the distinction between the inflammatory diseases which attack the several coats of the bladder, and points out the diseases of the prostate gland. He commences the work by treating of the urine in general, and then proceeds to irritability of the organ, paralysis, acute and chronic inflammation of the mucous, muscular and peritoneal structures, spasm, fungus hæmatodes, cancer, calculi, acute and chronic inflammation of the prostate gland and prostatic calculi. On the treatment of irritability of the bladder he gives the following directions :

“In some constitutions, notwithstanding the acid state of the urine, and the deposition of a large quantity of the lithate of ammonia, the alkalies disagree, producing restlessness, giddiness, and uneasiness about the region of the stomach. I have seen many cases of persons who had great irritability of the bladder, and whose urine was very acid, and deposited great quantities of the lithate of ammonia, but who could not bear even small doses of alkaline remedies.*

If the patient be of a nervous temperament, and the urine be alkaline, a different plan of treatment will be necessary.

* In such cases, the following mixture may be given:—℞ Spirit. Ammon. Aromat. ʒ ij; Spirit. Æther. Nit. ʒ ij; Tinct. Hyoscyam. ʒ ij; Mist. Camph. ʒ v. A fourth part to be taken three times a day.

The dilute mineral acids*, combined with the decoction of pareira brava, should be administered, and everything having a tendency to lower the system, as attention to business, study, or anxiety, should be studiously avoided.

In other cases, where the urine is neutral, the extract of the Uva Ursi†, combined with that of Hop or Hyoscyamus, may be taken, and opiate suppositories‡, or injections, with some drops of the Liquor Opii Sedat. according to the severity of the symptoms, may be administered. The decoction of Uva Ursi||, and the infusion of wild-carrot seeds§, will occasionally give great relief. In my experience, however, no medicine has been so often successful in irritability of the bladder, as the Diosma in the form of infusion**. I could cite several cases where it has succeeded after other medicines had failed."

On the Physiological and Medicinal Properties of Bromine and its Compounds, &c. By R. M. GLOVER, M.D., Edin.

There seems to be a strong analogy between the actions of bromine and iodine on the system, but on account of the milder and pleasanter preparations of iodine, it does not seem probable that those of bromine will be introduced into practice, at any

* R Acid. Nitric. dil. ℥ i; Acid. Muriat. dil. ℥ ss; Aquæ distillat. ℥ viij. Two table-spoonfuls to be taken three times a Day.

† R Extract. Uvæ Ursi gr. v. Extract. Humuli vel. Hyoscyam. gr. iij. Two pills to be taken three times a day. The acetous extract of Colchicum, or the muriate of Morphium, may be added to this formula; the former, if there be rheumatic pains in the limbs; the latter, if there much irritability of the bladder.

‡ R Pil. Saponis cum Opio gr. vij. To be introduced within the rectum at bed-time.

|| R Folior. Uvæ Ursi ℥ i, Aquæ ferventis ℥ xx; coque ad ℥ xvi. A third part of a pint to be taken three times a day.

§ R Seminum Dauci Contusorum ℥ i, Aquæ ferventis ℥ xvij; Macera per horas iv; dein cola. A third part of a pint to be taken three times a day.

** This is to be prepared according to the formula in the London Pharmacopœia. If there be scaly eruptions, and the urine very acid, the following form will be of service: R Infus. Diosmæ ℥ vij; Potass. Bicarbon. ℥ i; Tinct. Hyoscyam. ℥ iiss; Extract fluid. Sarsap. ℥ iv. Two table-spoonfuls to be taken three times a day. If the urine be not very acid, the alkali must be omitted.

rate, not for internal use. Dr. Glover recommends the external use of bromine in scaly darts affections of a peculiarly inveterate character; in specific and malignant ulcers where there is defective action; and in the form of lotion, the element furnishes an elegant and cleanly application. Oil-skin should be employed to cover the lint in which the bromine is dipped, in order to prevent the evaporation.

“Internally the use of bromine must necessarily be very limited. The sensation which attends the swallowing of it is, I repeat, truly horrid. The bromide of potassium is less powerful than the iodide, and might perhaps be used with advantage where the latter is apt to disagree with the stomach. The bromide of iron is perhaps the most agreeable of the strong preparations of iron. I have prescribed it frequently as a general tonic, and in hysteria and in leucorrhœa. I conceive it to be less liable to decomposition than the iodide. A most exaggerated notion has been entertained of its power. The bromide and sub-bromide of mercury appear to have the good and bad properties of corrosive sublimate and calomel.”

BOOKS RECEIVED.

1. Report to Her Majesty's Principal Secretary of State for the Home Department, from the Poor-Law Commissioners, on an Enquiry into the Sanatory Condition of the Labouring Population of Great Britain, with Appendices.

This is one of the most practical works of the description which we have ever perused; it gives a most deplorable description of the want of cleanliness, ventilation, and want of sewerage in our large manufacturing towns, with the appropriate remedies; with numerous plans for the economical construction of cottages and small buildings

2. On Diseases of the Bladder and Prostate Gland. By William Coulson. Third Edition.
3. Clinical Researches on Auscultation of the Respiratory Organs, and on the First Stage of Phthisis Pulmonalis. By Jules Fournet, Interne of the Hospitals, Paris, &c. A Work which obtained the Prize of the Concours of the Hospitals of Paris, in 1837. Translated from the French. By Thomas Brady, M.B., Fellow and Professor of Medical Jurisprudence in the King and Queen's College of Physicians, Ireland. Part I.
4. An Essay on Diabetes. By H. Bell, D.M.P., one of the Librarians of the Faculty of Medicine of Paris. Translated by Alfred Markwick, late Externe to the Hospital des Veneriens, Paris;

Member of the Parisian Medical Society.

5. A Treatise on the Enlarged Tonsil and Elongated Uvula, in Connection with Defects of Voice, Speech, and Hearing, Difficult Deglutition, Susceptibility to Sore Throat, Impeded Respiration, Disturbed Sleep, Throat Cough, &c. By James Yearsley, M.R.C.S., Surgeon to the Institution for Curing Diseases of the Ear, Sackville-street; Author of "Contributions to Aural Surgery;" Member of the Royal Institution, &c.
6. A Case of Carcinomatous Stricture of the Rectum, in which the Descending Colon was Opened in the Loin. By Alfred Jukes, Surgeon to the General Hospital, Birmingham. With Plates.

This is a very interesting little publication, on a subject which has lately engaged the deep attention of the Profession:—viz., Callisen's Operation, as re-introduced and modified by Amussat, for Opening the Lumbar Colon. (See Retrospect, Vol. V., Art. 1.)

7. Treatise on the Oleum Jecoris Aselli, or Cod-Liver Oil, as a Therapeutic Agent, in Certain Forms of Gout, Rheumatism, and Scrofula; with Cases. By John Hughes Bennett, M.D., formerly President of the Parisian Medical Society, and of the Royal Medical and Royal Physical Societies of Edinburgh, &c. &c.

BOOKS RECEIVED.—CONTINUED.

8. On Diseases which Affect Corresponding Parts of the Body in a Symmetrical Manner.
9. On the Physiological and Medicinal Properties of Bromine and its Compounds, &c.—Being the Harveian Prize Essay, for 1842. By R. M. Glover, M.D., Edin., Newcastle-on-Tyne.
10. On the Treatment of the Hæmorrhagic Diathesis. By James Miller, Esq., F.R.S.E., Lecturer and one of the Surgeons of the Royal Infirmary of Edinburgh. (Noticed in Article 46 of our present Vol.)
11. Observations on the Admission of Medical Pupils to the Wards of Bethlem Hospital, for the Purpose of Studying Mental Diseases. Third Edition. By John Webster, M.D., &c., one of the Governors.
12. Guy's Hospital Reports. (In exchange.)
13. The American Journal of Medical Sciences. Edited by Isaac Hays, M.D., Surgeon to Wills Hospital, Physician to the Philadelphia Orphan Asylum, &c. (All the Numbers, to Oct. 1842, in exchange.)
14. Report of the Result of the Operation for the Cure of Strabismus in a Hundred Patients. By J. B. Estlin, F.L.S., Surgeon to the Dispensary for the Cure of Complaints in the Eyes, Bristol.



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